MAY, 1948

MAY, 1948

MAY, 1948

AIR CONDITIONING

EQUIPMENT

INDUSTRY

MERCHANDISING

INSTALLATION

MAINTENANCE



Circulation of This Issue 28,451



PR's Out Front Again!

announcing

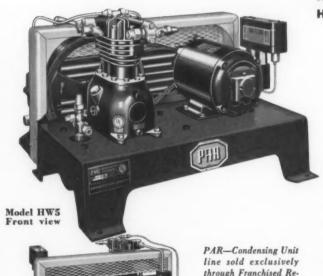
With CLEANABLE CONDENSERS

HW-5 1/2 H.P. Heavy Duty Unit

Par Models HW5 and HW7, ½ h.p. and ¾ h.p., water-cooled units with cleanable condensers are now in the popular line of Par Condensing Units. These 2 units also feature small over-all dimensions permitting installation in small areas or close places.

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See your Par Wholesaler for complete details and specifications on these new Par units and keep an eye on Par for future announcements.



Rear view

By Comparison - You'll Buy PAR

frigeration Equipment

Wholesalers!

LYNCH CORPORATION-

Par Compressor Division

TOLEDO 1, OHIO U.S.A.

Refrigeration

VOLUME 5, NO. 5

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THIS MAGAZINE has no official affiliation with ANY group, society or association.

THEODORE T. QUINN

Editor

JAMES R. McCALLUM JR.

Associate Editor

WARREN W. FARR H. S. McCLOUD Editorial Advisors

WILLIAM V. LINAS Production Director

E. J. HEXTER Circulation Director

Address all communications to THE REFRIGERATION INDUSTRY

1240 Ontario Street Cleveland 13, Ohio

SALES OFFICES

CLEVELAND 1240 Ontario Street L. L. OPPENHEIM

NEW YORK 18 19-25 W. 44th Street Room 412 LEF HAAS

CHICAGO 1 64 E. Lake Street Room 1013 NORMAN J. LOTT SAM R. TRACY

CCA

THE COVER . . . Air conditioning is an extremely important factor in this master gauge laboratory at the East Pittsburgh Works of Westinghouse Electric Corp. where temperature must be maintained at 68 F dry bulb, plus or minus ½ degree, the year around. American industry abounds with similar opportunities for air conditioning installations.

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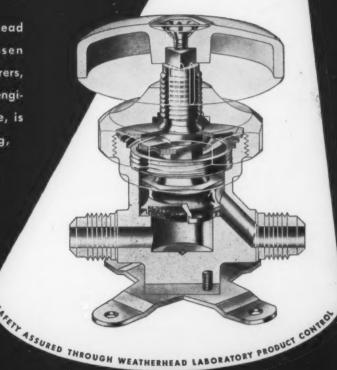
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Acceptance under the Act of June 5, 1934, at Milwaukee, Wisconsin, authorized March 26, 1947.



Accepted by the Industry

Knowing that Weatherhead Packless Valves are chosen consistently by manufacturers, wholesalers and service engineers for rugged service, is your assurance of long, dependable performance, and resulting customer satisfaction.

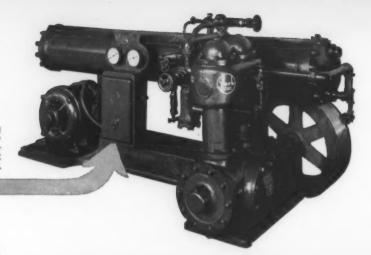


Look Ahead with

THE Weatherhead co.

CLEVELAND 8. OHIO

PLANTS AT CLEVELAND, OHIO • ANGOLA, INDIANA • COLUMBIA CITY, INDIANA
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York Refrigeration Unit equipped with Allen-Bradley Bulletin 709 Form 3 Automatic Solenoid Starter with HAND-OFF-AUTOMATIC Selector Switch in cover of cobinet.



The Allen-Bradley Bulletin 709 line of solenoid starters will handle motors up to 100 hp, 220v; 200 hp, 440-550 v. In various enclosures.

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equipped with

Trouble-Free Motor Controls

ALLEN-BRADLEY STARTERS ARE TROUBLE FREE. Only one moving part. No pivots, pins, or bearings to corrode or stick...no jumpers to break. You install them...and forget them!

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DEPENDABLE OVERLOAD RELAYS. Allen-Bradley thermal relays are accurate and dependable even after long service.

The A-B trademark stands for millions of trouble-free operations.

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ALLEN-BRADLEY AIR-CONDITIONING AND REFRIGERATION CONTROLS

PRESSURE AND TEMPERATURE







High-pressure cutout and motor starter in same enclosure. Temperature controls can be mounted with motor starter in same way. MANUAL STARTER AUTOMATIC

COMBINATION

HEAVY COMPRESSION STARTER



ALLEN-BRADLEY
SOLENOID MOTOR CONTROL

DOMALITY

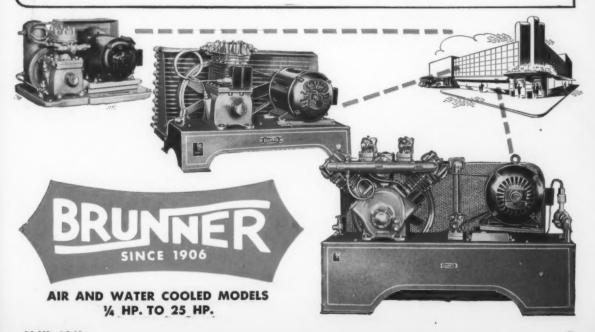
BRUNNER REFRIGERATION helps you serve better

Memo to Maintenance Engineers

'Tain't so you say, but consider this: often less than 15% of the installed cost of a refrigerated display case, walk in cooler or similar erated display case, walk in cooler or similar refrigerated equipment is represented by the actual refrigeration unit. Now think: the entire usefulness of that equipment and the value of their contents is fully dependent upon the uninterrupted operation of the refrigeration unit.

Your customers realize this. That's why they look to you, on both new and replacement installations, to provide refrigeration units that will give full usefulness and protection to their refrigeration dollars. Satisfied customers are your best source of income—protect it-install Brunner.

BRUNNER MANUFACTURING CO. UTICA 1. NEW YORK, U. S. A.



49 FAST ANSWERS TO 49 EMERGENCIES

Refrigeration V-Belts in a Portable Assortment

The 49 V-Belts in greatest demand by Refrigeration Service Men have been selected for this U. S. Rainbow V-Belt assortment.

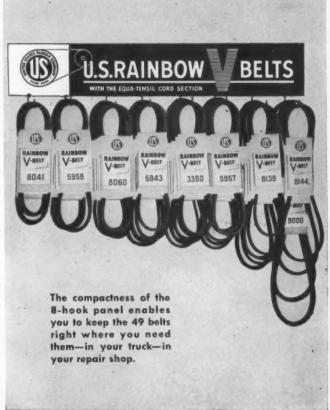
With this compact stock you can be ready with the exact belt needed. These 49 cover service on hundreds of domestic and commercial refrigeration units, ice-cream machines, frozen-food plants, air-conditioning systems and other allied equipment.

Each belt has the unique Equa-Tensil Cord Section—the U.S. Rubber development which provides great pull and endurance.

Order from your Jobber, or for more information write Mechanical Goods Division, United States Rubber Company, 1230 Avenue of the Americas, New York 20, N. Y.

U. S. RAINBOW—The V-BELT With The Equa-Tensil Cord Section







New-Compact Marvel of Efficiency! TYPHOON

Console Air Conditioner 11/2-2-3-TON SIZES



THE TYPHOON CONSOLE is ideally suited for professional offices, little shops and stores, and homes.

Typhoon engineers have developed a new, amazingly compact packaged air conditioner that incorporates all the features that have made the standard Typhoon unit an accepted success in hundreds of installations throughout the country.

The Console unit delivers the same output per horsepower at the same low noise level as the larger unit. A radical new arrangement makes possible full sized coil, motor, compressor and condenser in a more compact unit. Thus, a lot of air conditioning is engineered (not crowded) into this small cabinet. The Typhoon designed parts assure long life and trouble-free performance.

The 11/2, 2 and 3-Ton Typhoon Consoles are cased in cabinets made of heavy gauge furniture steel thoroughly insulated for quiet operation. A removable cover exposes the entire working mechanism for easy inspection.

Steam or hot water coils may be installed in Typhoon units for year-'round utility. All Typhoon units are carefully tested under actual working conditions before they leave the factory.

Over 35 years of air conditioning experience is engineered into Typhoon units.

3-5-7-TON PACKAGED AIR CONDITIONERS

These Typhoon units are ruggedly engineered of oversized components to insure full rated capacity, 12,000 BTU's per ton of rating, under the most difficult operating conditions. The oversized compressor operates at moderate speed, and low pressures are maintained even with high temperature water or for cooling tower operation. Typhoon units are particularly good where "water conditions are bad."





TYPHOON



REFRIGERATION'S BIGGEST PROBLEM!



DRYING POWER OF

VARIOUS MATERIALS

Important Guestions ...IN SELECTING A DRIER

- Does the material dry the refrigerant below the corrosion limits when placed in the liquid line? In the suction (vapor) line?
- Does the material dry the refrigerant below the limits for ice formation with methyl chloride and the "Freon" refrigerants?
- Does the material accomplish the drying in one passage of the refrigerant, or is it slow, i.e., requires several passages?
- 4. Does the material deteriorate in physical character in handling or when it removes water from the refrigerant?
- 5. Does the oil affect the drier adversely?
- 6. Does the drier corrode?

		Liquid	Max. Residual Water Concentration After Passage Through Drier					
Drier	Refrigerant	Vapor	.25% Initial Water Concentration	.02% Initial Water Concentration				
ACTIVATED ALUMINA	Sulfur Dioxide Methyl Chloride	->->	.15 .01 .02 .01	.005				
SILICA GEL	Sulfur Dioxide Methyl Chloride	-> L>	.15 .01 .01	.006				
DRIERITE (Calcium Sulphate)	Sulfur Dioxide Methyl Chloride	r> r>	.15 .08 .05	.009				
CALCIUM CHLORIDE CaCl ₂	Sulfur Dioxide Methyl Chloride	F> L>	.09 .03 .10 .04	.013				
CALCIUM OXIDE CaO	Sulfur Dioxide Methyl Chloride	->->	.20 .15 .15	=				
BARIUM OXIDE BaO	Sulfur Dioxide Methyl Chloride	>	.20 .15 .05 .05	.017				



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An informative reprint, "REFRIGERANT DRIERS," will be sent on request. No obligation. Send for it today.

ANSUL WHOLESALERS are ready and equipped to render an intelligent, co-operative service to refrigeration engineers and maintenance men on problems which arise from time-to-time in the operation of refrigerating systems.

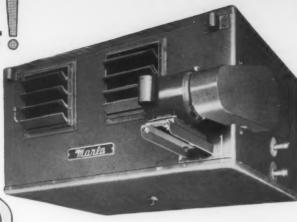
ANSUL REFRIGERANTS ARE AVAILABLE AT LEADING WHOLESALERS EVERYWHERE

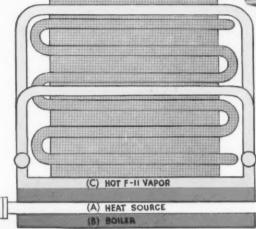
ANCIII CHEMICAL COMPANY

REFRIGERATION DIVISION, MARINETTE, WISCONSIN

DISTRIBUTORS FOR KINETIC'S "FREON-11," "FREON-12," "FREON-21," "FREON-22" AND "FREON-113"

ANOTHER MARLO FIRST





HERE'S HOW IT WORKS: Heat source (A) vaporizes the sealed charge of Freon 11 (Trichloromonofluoromethane) in boiler (B). Vapor circulates through tubing (C) interspersed between refrigeration coils, quickly defrosts them,

automatic Vapo

BEFROST SYSTEM

DEFROSTS WITH SPEEDY TROUBLE-FREE F-11 VAPOR

An entirely new, faster, foolproof principle to end your defrosting troubles! • No water • No pumps or other moving parts • No intricate electric control system.

performs equally well with electric heating elements steam or exhaust gases heat of compression or any other source of heat

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MARLO COIL CO. / ST. LOUIS 10, MO.

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about CHASE Wrought Copper fittings



MADE TO EXTREMELY CLOSE TOLERANCES.

SOLDERED TO CHASE EXTRA SOFT TUBE

THEY FORM LEAK-PROOF JOINTS!



NON-POROUS—REFRIGERANT GASES CAN-NOT PENETRATE OR PERMEATE THEM.



THEY EXPAND AND CONTRACT TO EXACTLY
THE SAME DEGREE AS THE TUBE. THE
JOINT STAYS TIGHT.

C HASE Wrought Copper Fittings are made to very close tolerances. A proper tube-to-fitting fit is assured if you use the combination of Chase Tube with Chase Fittings.

Made of wrought copper, Chase Fittings are non-porous, sound. Refrigerant gases cannot seep through.

In addition . . . Chase Wrought Copper Fittings expand and contract

to exactly the same degree as the tube! They are not affected by ordinary vibration or pressure.

Chase Extra Soft Copper Refrigerator Tube along with Chase Wrought Copper Fittings offers the best combination for the service man and the distributor. Keep asking for Chase. Even though we can't satisfy the demand today we hope to be able to do so in the near future.



CHASE Extra Soft Copper Tube in an Extra-Handy package

Chase Copper Refrigerator Tube is extra soft for easy bending. Positive end seal fits anywhere the tube will fit—need not be removed till you're ready to make connections.

Space-saving package is plainly labeled with full specifications—can be reused to protect and identify cut coils. Tube sizes: 1/8" to 3/4" diameters, 50' and 100' lengths.

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SUBSIDIARY OF KENNECOTT COPPER CORPORATION

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Gene	ral Mot	ors	Corp.,		
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Name _

Firm Name_



CARRIER CONDENSING UNITS

- * HIGHLY EFFICIENT OIL SEPARATION
- * GENEROUS CONDENSER SURFACE
- * STATIC AND DYNAMIC BALANCE
- * LARGE VALVE AND PORT AREAS

WINNING TEAM

CARRIER COLD DIFFUSERS

- W UNUSUALLY COMPACT DESIGN
- * ADVANCED TYPE REFRIGERANT CIRCUIT
- * NEW IMPROVED ALUMINUM FANS
- * LARGE COIL SURFACE AREA



Here's the way to be sure of *peak refrig*eration performance. Install a Carrier Cold Diffuser to go with the Carrier Condensing Unit.

These skillfully engineered units are designed for each other . . . built to deliver the maximum of dependable, balanced refrigeration at lowest possible cost. They're the only units of their kind both built by the same manufacturer. They work as a team to provide greater food

protection, with less spoilage, shrinkage, discoloration and flavor loss.

Carrier Condensing Units give customers the advantages of many exclusive features—vapor-cushioned valves for long life, larger condenser surface for low-cost operation, multiple V-belts for continuous operation and others. Carrier Cold Diffusers cut food-processing costs through fast cooling and efficient air distribution. Water defrosting

is available with a simple attachment.

Like every other Carrier product, this refrigeration team is backed by Carrier's long, world-wide experience in refrigeration design and manufacture. Carrier engineers are ready to help with installation and service. That's an extra that goes a long way toward assuring customer satisfaction—and future business. Carrier Corporation, Syracuse, New York.



The DOOR that helped make quick freezing possible

... JAMISON-BUILT Super Freezer

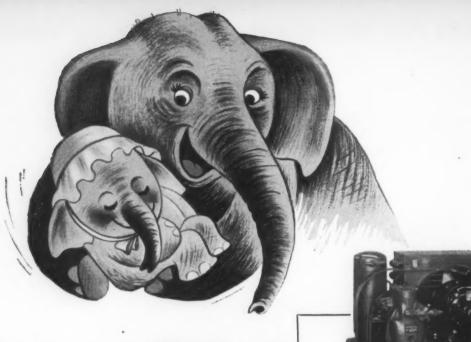
This Super Freezer Cold Storage Door is of the Stevenson overlap type for service at sub-freezing and sharp freezing temperatures. It is far superior for ice cream hardening rooms, frozen food storage, low-temperature test rooms, and similar applications. Hardware of extraordinary strength and unusual design is used on these doors.



Standard models of this Jamison-built Super Freezer Door are available in a wide range of sizes. Should you require special types or sizes, we are equipped to build them to any specification. Write for the address of our nearest branch office or send for complete catalog to Jamison Cold Storage Door Co., Hagerstown, Maryland.



The Oldest and Largest Builder of Cold Storage Doors in the World.



Here's a new <u>SMALL</u> unit with <u>BIG</u> unit features

Packed with the sales appeal only good engineering can give, the new Type CW Condensing Units embody big unit advantages rarely found in fractional hp machines.

For example, a forced feed lubrication system. And the G-E lubrication system has only one moving part which provides ample oil for every "wear point" of the compressor. That's one reason why General Electric units last longer, operate more smoothly and give your customers the kind of dependability that helps your reputation.

The CW line, ranging from 1/6 hp to 1-1/2 hp is designed so that many vital parts are interchangeable. For example, the same shaft seal is used throughout the entire line. This means lower parts stock, lower overhead, less time lost in obtaining the right part.

You'll find every installation of this new G-E line a real reputation and business builder. Call your G-E representative for full details. General Electric Company, Air Conditioning Department, Section R8145, Bloomfield, N. J.



- 1. Forced feed lubrication.
- 2. Counterbalanced crankshaft.
- Oil sight glass which gives a positive means of checking oil supply and operation of lubrication system.
- 4. Rotating balanced bellows shaft seal.
- 5. Thin valve plate for high volumetric efficiency and low operating cost.
- Wide opening ring type valves of highstrength Swedish steel.
- 7. Many interchangeable replacement parts.
- 8. Lead-plated copper gaskets for a better seal and easier servicing.
- All units run-in tested under actual operating conditions before leaving factory.

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Better Refrigeration

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When you seek information on new developments, price changes, or which is best to use where he's got it at his fingertips

Whenever you need help of

any kind, he's a

mighty good man

to know — because

every ALCO Wholesaler is carefully
selected to give you just as fine
service as ALCO Valves do — to
help build your business bigger.

when you're in need he's a friend indeed-

CALL YOUR ALCO WHOLESALER!



He's the vital link in the refrigeration industry that joins us all together for mutual help and profit!

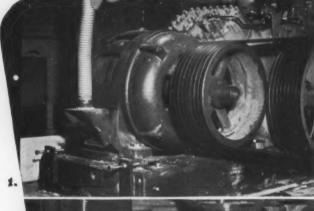


ALCO VALVE CO.

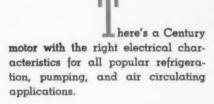
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Properly Selected CENTURY MOTOR

Assures







Among their advantages are: the right starting torque, unusual freedom from mechanical and electrical vibration, rigid construction, adequate ventilation system, accurate machining and long life bearings.

Century motors for the heating, ventilating and air conditioning industry help to build customer satisfaction because they operate smoothly and quietly throughout their long life.

Century builds a wide range of motor types in sizes from 1/6 to 400 horsepower to assure top performance for every electric power application.

Specify Century for all your electric power requirements.

CENTURY ELECTRIC COMPANY

1806 Pine Street . St. Louis 3. Missouri Offices and Stock Points in Principal Cities

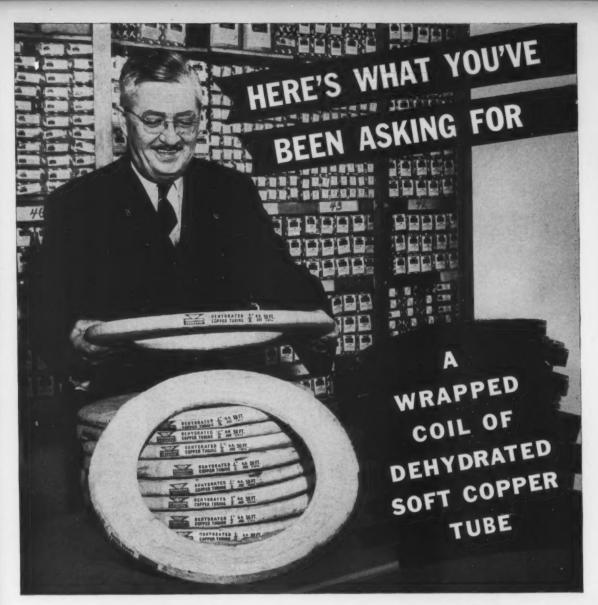
1. Century 75 horsepower Type SCH squirrel cage motor provides the necessary high torque to start this reciprocating compressor without

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3. Century 200 horsepower Type SR slip ring motor driving a compressor.

The high starting torque brings the compressor up to speed quickly and smoothly. The gear box increases the speed to 9,000 RPM.





Mueller Brass Co. Dehydrated Copper Tubing is now conveniently available at your whole-sale refrigeration dealers.

Dehydrated Copper Tubing of our manufacture is bright, clean, and as dry as is humanly possible to make it. It is annealed dead soft so that it can be easily formed or bent. It will flare without fracture.

It is furnished in bunched coils carefully wrapped and protected for shipping and stocking. It is manufactured in the following sizes:

1/8" to 3/4" inclusive

.035 wall 50' lengths

Order through your wholesaler.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

FRESH MEAT

WITH

THERMOBANK

by KRAMER

Only THERMOBANK keeps

Coils Frost-Free Automatically

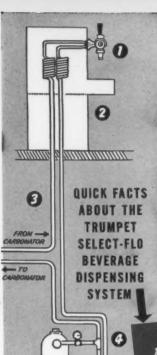
at any Temperature

without

LABOR
ATTENTION
ELECTRIC HEATERS
BRINE OR WATER SPRAYS

WRITE FOR BULLETIN R147

KRAMER TRENTON CO. Trenton 5 N. J.



5

Profits flow your way when you show how...

This ONE draft arm does TWO jobs ... at BIG savings!

corrosion-resistant, these strong, sturdy lines resist denting, collapsing and bursting. They are double-walled tubes of pure Nickel - made by the famous Bundyweld process. They are smooth inside and outside. Are readily cleaned. Give quick cooling.

Because of all these features, Trumpet Select-Flo offers tremendous sales possibilities for you. Draft arms are available in 3 styles: goose-neck, straight arm or under-the-bar type. They come with complete dispensing units, or the arms alone can be installed for use with present coolers, carbonators and CO, tanks.

For full details about Trumpet Select-Flo beverage dispensing systems, write the manufacturer. WOOSTER BRASS COMPANY, Wooster, Ohio. And for information about better tubing for all coils and leader lines that handle beer, carbonated water or sweet water, write us. Just say: "Send me information on Bundyweld tubing made of Nickel."

THE INTERNATIONAL NICKEL COMPANY, INC. 67 Wall Street, New York 5, N. Y.

Every fountain, every bar, every store that sells

carbonated drinks is a hot prospect for the

It saves money for them-makes money for you.

Installation is simple, as shown above. In the for-

No more hand mixing for carbonated beverages.

No guessing on the amount of syrup. No waste.

Select-Flo eliminates counter dispensers and bot-

tled goods. It speeds up service . . . reduces labor

cost . . . increases the profit margin on every sale.

Select-Flo has no moving mechanical parts. Once

the regulating device in the mixing unit is set,

trouble-free as anyone could hope for. Highly

Soundly designed and constructed, the Trumpet

The soda water line and cooling coil are as

ward position, the Select-Flo draft arm dispenses

a perfectly-mixed carbonated drink, such as cola,

lemon 'n' lime or ginger ale. In the back position-

TRUMPET Select-Flo dispensing system.

clear, sparkling soda water!

it stays in adjustment.



OF SERVICE TITE NICKE Your Unseen Friend Comfort is Profitable



Soon PEOPLE WILL

BE Flocking TO THE

AIR-CONDITIONED PLACES

Desire for comfort has been one of the great driving forces of civilization. As soon as man assures himself enough to eat, he sets about improving his comfort. He is willing to spend plenty of money to do it. That desire for comfort can make profit for you and for the users of air conditioning.

Soon people will be flocking to air conditioned stores, movies, taverns, etc. Those who can afford it will be thinking about air conditioning for homes and offices.

Start now to sell air conditioning, and remember "Detroit" Thermostatic Expansion Valves provide the most satisfactory, trouble-free refrigerant control.

Available in the desired capacities, they have the dependability and durability to give long service without attention.

"Detroit" Thermostatic Expansion Valves are gas-charged—which gives them close regulation—guards against motor overload. Often, gas charging makes possible use of a smaller motor, since it does not have to work against excessive pressure during the pulldown period. Gas-charged valves balance the system more quickly when starting up, insuring fast, positive action.



"DETROIT" No. 899

Thermostatic Expansion Valve

An air conditioning or commercial valve of intermediate capacity. Incorporates the features of single diaphragm construction and gas charging. Forged union connections are compact and make removal easy. Capacity 1.5 to 6 tons Freon-12.



"DETROIT" No. 673

Thermostatic Expansion Valve

For many years, the standard of the air conditioning and refrigeration industry. Reliability proved by long service. Orifice sizes ¾" to ¾" with capacities up to 3½ tons Freon-12 and 6 tons Methyl.



"DETROIT" No. 787

Thermostatic Expansion Valve

Representative of the "Detroit" large capacity line. No. 786 is rated 3 to 6 tons ... No. 787—6 to 11 tons ... No. 788—12 to 20 tons Freon-12. These valves have external equalizer connection and can be durnished with No. 790 distributor with 2 to 18 outlets for multiple distribution,

2985

DETROIT LUBRICATOR COMPANY

General Offices: 5800 TRUMBULL AVENUE, DETROIT 8, MICHIGAN
Devision of American Radiator & Standard Sanitary corporation

DETROIT DIVINOU OF AMERICAN RADIATOR & SANDLARD SANDLARD CORPORATION.

"Detroit" Heating and Refrigeration Controls • Engine
Safety Controls • Float Valves and Oil Burner
Accessories • "Detroit" Expansion Valves and Refrigeration Accessories • Stationary and Locamotive Lubricators



Curtised AIR CONDITIONERS Are Advertised in the "SATURDAY EVENING POST" "TIME"

AND OTHER LEADING MAGAZINES

Starting April 24, Curtis Air Conditioners will be featured in full pages in color in the Saturday Evening Post and Time presenting the advantages of Curtis "Comfort Zone" Air Conditioning to more than 5,500,000 readers.

Here's your opportunity to reap the benefit of the great selling and merchandising power of these outstanding publications—reaching your major markets.

Sound design and engineering have proven Curtis units to be ideal for stores, offices, taverns, drug stores, apparel shops, beauty parlors, restaurants and many others.

It will pay you to get set to sell this vast and rapidly growing market now.

Write to Curtis for full information on how you can tie in with Curtis' new national advertising plans and assure more air conditioning sales and profits for 1948.





Curtis Air Conditioning Units 3, 5, 71/2, 10 and 15 Tons.

Constin

REFRIGERATING MACHINE DIVISION

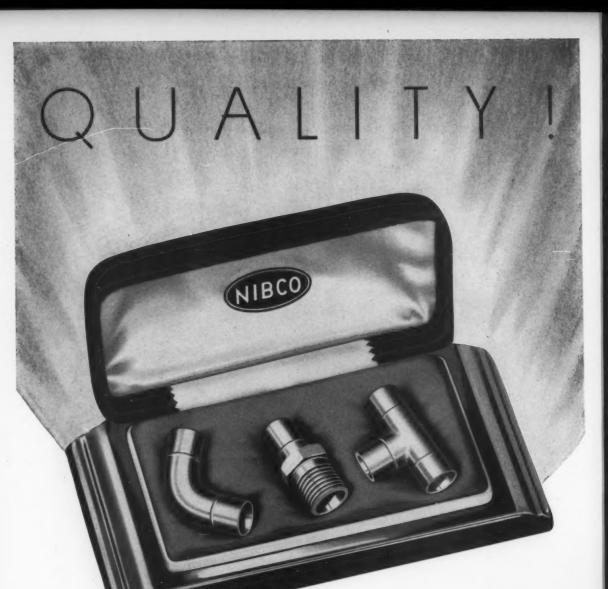
of Curtis Manufacturing Company

1915 Kienlen Avenue

St. Louis 20, Mo.

AB-597

94 Years of Precision Manufacturing



NIBCO WROT FITTINGS If we delivered them in a jewel case like this, NIBCO WROT Fittings couldn't be finer

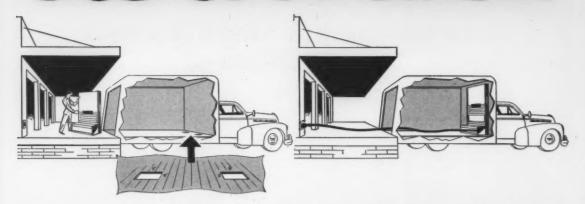
for their purpose. They really are gems when you want a job to be proud of—they form perfect solder joints, leakproof, stronger than the tube! They're accurately formed to close tolerances under hydraulic pressures, by a patented process. NIBCO's uniform quality assures long life, trouble-free service—protects your profits and builds more business.

NIBCO WROT Fittings come to you conveniently packaged and marked for quick, easy identification, in time-saving cloth sacks. Available in a wide range of sizes and types. It will pay you to standardize on NIBCO WROT Fittings for refrigeration and air conditioning jobs. Write now for Catalog.

NORTHERN INDIANA BRASS CO., 514 Plum St., Elkhart, Ind.

Quality Valves and Fittings Since 1904

Here's NEW CONVENIENCE in Truck Refrigeration



A complete, packaged TRUCK REFRIGERATION UNIT that you can install yourself

The utmost simplicity of the new Kold-Hold Packaged Refrigeration Unit pays dividends for you in lower Truck Refrigeration costs. Just push the Unit into the truck, bolt it in place and it's ready for operation.

The cooling cycle is started by merely plugging-in to any 110 volt electric outlet. Thus, you can build refrigeration in the truck wherever electricity is available. The "Hold-Over" Plates in the unit will maintain the predetermined low temperature of the truck throughout a day's deliveries.

What Is It? A complete assembly of all units necessary to adequately refrigerate an average truck 40° to 50° temperature for a day's run.

How Does It Work? Unit is shipped complete, ready to install. Push into truck, cut holes for air intake and discharge, bolt to floor and plug into electrical outlet.

Is Body Work Required? No. The unit is adjustable to fit most any truck. No "dog house" for compressor, no change of body or expensive installations are required.

How Long To Freeze Plates? Ample plate refrigeration for extreme weather conditions.

How About Long Runs? Truck Contents are easily protected on runs of 2 days or longer by simply plugging-in at any gas station, garage or overnight stop.

What Is Operating Cost? The 1 hp. compressor has capacity of 42,000 BTU's in 10 hours and operates for a few cents a day. Any refrigeration man can service if ever necessary.

How Does It Compare With Ice? The Kold-Hold Unit provides a more dependable refrigeration at less cost. There is no slime or bother.

Is This New? It is new only in that it is a packaged unit. Kold-Hold Refrigeration Plates have given satisfactory operation for hundreds of users for over 15 years.



New bulletin describes the many advantages of Kold-Hold PACKAGED Truck Retrigeration. Write for your copy today.



Jobbers in Principal Cities

PROCESSING

protects every step of the way

STORAGE

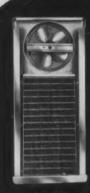
KOLD-HOLD MANUFACTURING COMPANY - 503 E. HAZEL ST., LANSING 4, MICHIGAN

MAY, 1948

23

TRANSPORTATION

CASCADE "IT'S PEERLESS MADE" ONE OF THE BIG THREE OF 1948



BACK VIEW

It's new! For the first time in commercial refrigeration, radiant coaling and convection coaling are combined and the arnamental casing of a mator driven unit is utilized as cooling surface. Fins are attached to the rear of the front panel by means of the copper tubing carrying refrigerant. Warm air from the refrigerant is drown in at the top, cascaded over coils and discharged



MINI MANAGEMENT

SIDE VIEW

"downwardly from the face of the unit. The entire front of the unit radiates cold to products without dehydrating blasts of air. Hugging the wall, saving many cubic feet of usable space, the Cascade Cooler is perfect for reach-in and walk-in coolers. In appearance, it's a beauty of polished aluminum, complete with built-in heat exchanger and suction spinner.

Model No.	List Price	Copacities B.T.U. per Hr. at Given 1.D. Between Air and Refrigerant		Motor and Fan Characteristics			Overall Dimensions Including Mater			Connections				
		17	107	20"	Meter H.P.	RF.M.	Fun Size	C.F.M. Capacity	Height	Width	Depth.	Liquid	Section	Drain
68	\$70.00	65	650	1300	1/100	1500	8	190	25%	16%		1/2	1/2	1/2
88	80.00	9.5	950	1900	1/100	1500	8	210	31	16%		1/2	1/2	1/2
128	90.00	125	1250	2500	1/100	1500	10	320	37 1/2	16%		1/2	1/2	1/2
228	135.00	225	2250	4500	1/30	1000	12	510	41	29	8.74	1/2	1/2	1/2
328	156.00	325	3250	6500	1/30	1000	16	730	46 %	38	8 1/4	1/2	1/2	1/2
458	198.00	450	4500	9000	1/30	1000	16	860	551/2	38	8 1/4	1/2	5%	1/2
608	244.00	600	6000	12000	1/30	1.000	16	1050	73	38	8 1/4.	1/2	3/8	1/2



ENGINEERING DATA ABOVE

FOR BOX TEMPERATURES ABOVE 32" FOR USE WITH FREON, METHYL CHICKIDE AND SURHUR AS REFRIGERANT.

PEERLESS of AMERICA, Inc.

2901 LAWRENCE AVE.

CHICAGO 25, ILLINOIS, U. S. A.



the Wagner Fractional Horsepower Motor

If you manufacture, install, or service compressors, stokers, deep freeze units, pumps, or any of a hundred different motor-driven appliances-you have a special interest in dependable fractional horsepower motors.

Wagner Fractional Horsepower Motors are the first choice of many manufacturers of small machines and appliances. Millions of these small-sized, low-priced motors have been in use for years, giving troublefree performance and building customer satisfaction. Take a tip from these manufacturers and reduce service calls due to motor failure by choosing Wagner Motors. More than fifty-five years of motor building experience stands behind every motor bearing the Wagner name.

Twenty-nine branch offices, located in principal cities, are ready to assist you, without obligation, whenever you have a motor problem. Write for Bulletin MU-185 for information on the complete line of Wagner Quality Motors.



tional Horsepower Motors are now available from stock.

Wasner Electric Corporation

6442 PLYMOUTH AVE., ST. LOUIS 14, MO.



ELECTRIC MOTORS . TRANSFORMERS . INDUSTRIAL BRAKES . AUTOMOTIVE PRODUCTS .



One look will tell you why the new USAIRCO STORE CONDITIONER stands out in front for self-contained air conditioner sales! It's redesigned inside and out for better performance, for greater sales appeal. And, it's backed by a big advertising

and sales promotion campaign planned to help

you sell!

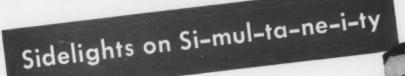
You'll find a new hermetically-sealed motor-compressor unit in the USAIRCO STORE CONDITIONER. And, that means no refrigerant seal to give trouble or require servicing. You'll also find a new water-saving condenser coil, designed by USAIRCO engineers to remove the generated heat from the compressor most efficiently and economically. And, there are many other outstanding features in the new USAIRCO STORE CONDITIONER that will make it easier for you to sell self-contained air conditioning.

Write today for your copy, Dealers' Sales Kit— USAIRco Refrigerated-Packaged Air Conditioning.

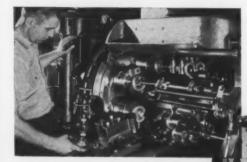
UNITED STATES AIR CONDITIONING CORPORATION
Como Avenue S. E. at 33rd Minneapolis 14, Minn.



BEZING ROELS by Super



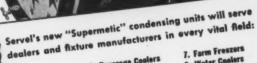
The best known exemple of simultaneity (doing many things at once) probably is the one-man band. Some of these ingenious gents can play six instruments at once-blow a harmonica, strum a guitar, pound away at a variety of rhythm instruments, and blurt out with bicycle horns, too. For relaxation we hear, they juggle double-edged razor blades.



Another fine example is found in the high-speed, completely automatic chucking machine used during the manufacture of Servel Supermetics. This precision machine simultaneously performs six separate roughing operations on six identical parts . . . certainly a top-notch sample of simultaneity

Simultaneous machining - along with hundreds of other high-speed precision operations -helps make each Servel Supermetic a dependable, longer-lasting condensing unit. These units are made in all types and sizes for applications up to 5 H.P. Send for free copy of "Servel Supermetic." Ad-

dress Servel, Inc., Division ER, Evansville 20, Ind.



- 1. Store Fixtures 2. Milk Coolers
- 3. Home Lockers
- **Vending Machines**
- 10. Vehicle Refrigeration
- 8. Water Coolers

9. Industrial Cooling

SUPERMETIC





No Loss of CO₂ gas with NEW TEMPRITE Carbonator

(Above) Model CB-305 Temprite Packaged Carbonator, to be used with existing or separate soda cooling systems, is also obtainable enclosed in an attractive metal cabinet for installations in unprotected locations.

Temprite Instantaneous Combination Cooler and Carbonator Unit is also available where both cooling and carbonation are required on a single installation. Bulletins available on request, Countless soda fountains and taverns have been operating for years with inadequate or obsolete carbonating equipment. Start to make new profits now in this large market. Tell bar and soda fountain owners about the new Temprite Carbonator that pays for itself in no time at all... pays for itself because there's no loss of CO2 gas through vents or purging devices... making it possible to actually deliver over 5620 glasses of highly carbonated water from a single tank of CO2 gas.

Easily and inexpensively installed, the Temprite modern packaged carbonator is completely factory assembled, ready for immediate installation and operation. Dimensions of 13" square by 16" in height permit installations in practically any location.

See your local Temprite wholesaler or write for complete details.

TEMPRITE PRODUCTS CORP. CARRIET COLLER CONTROLLER SON FUNDAM COLLERS CONTROL VALVES COLLERS SEPARATIONS. MEAT EXCHANGER MATER COLLERS TAMES Originators of Instantaneous 80° 40° Liquid Cooling Devices

41 PIQUETTE AVENUE

DETROIT 2, MICHIGAN



Suitable for shop or service truck

GILMER #355 V-Belt Assortment

Here's the foundation of a complete V-Belt department—in minimum space—with minimum investment. Records show these 50 refrigerator belts are the ones ordered most frequently . . . tallied most often on Gilmer sales records.

Included with this assortment are valuable merchandising aids listed at right—aids to speed servicing...to assure accurately fitted replacements of V-Belts.

Gilmer V-Belts are noted for firm grip, steady pulling power. Their heavy-duty jackets and stretch-controlled cords last longer in the *start* and *stop* wear of fast-moving small drives. Remember, Gilmer has the PULL. Order the #355 Assortment *today*.

ASSORTMENT #355

- 1. 50 V-Belts in 31 most popular sizes
- 2. 8-hook Metal Wall Rack
- 3. Gilmer Handimeter (patented) for quick measuring of belts
- 4. Gilmer V-Belt Catalogue, "America's Belt Bible"
- 5. Inventory Card
- 6. Attractive Window Display Card

Buy Through Your Gilmer Distributor

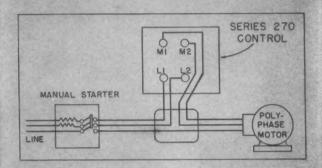
L. H. GILMER COMPANY, Tacony, Philadelphia 35, Pa.

Division of United States Rubber Company



Series 270 and 272 PENN "Single" temperature or low side pressure controls. Also (not shown) Series 271 and 273 PENN "Dual" Controls which combine in one unit a temperature or low side pressure actuated mechanism and built-in high-pressure safety cur-out.

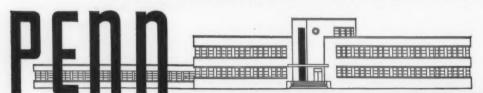
CONTROL POLYPHASE MOTORS WITHOUT LINE STARTERS



Switch to PENN 270

First and only control in the refrigeration and air conditioning fields beginning.

First and only control in the refrigeration and air conditioning fields having a load-carrying two-pole switch, the Penn 270 is adaptable to a wider variety of applications. For example, in hermetically sealed units with polyphase motors of 3 h.p. and under (where protection against single phasing is otherwise provided), the "270" eliminates the need for contactors or line starters. The result is a simple, dependable, lower-cost installation. The Penn 270 can control multiple refrigeration systems. It can control two separate load circuits. And when wired in single phase circuits as a 2-pole switch, it always breaks the "hot" line. For further details, see your wholesaler or write for Bulletin No. 2652 to Penn Electric Switch Co., Goshen, Ind. Export Division: 13 E. 40th St., New York 16, U.S. A. In Canada: Penn Controls Ltd., Toronto, Ont.



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

News · Laws · Trends

● Trade-In Conference. "What to do about Trade-Ins" is the subject of a conference by members of National Electrical Retailers Association on May 5 and 6 in the Merchants & Manufacturers Club, in Chicago's Merchandise Mart. According to F. E. Morrison, manager of the appliance department of Rockford (III.) Standard Furniture Co., chairman of the NERA committee on tradeins, the first day's session will include dealer committee meetings which will develop recommendations to be made at the second day's meeting, which will be a joint conference with representatives of manufacturers and others concerned with trade-ins.

The two-day session is expected to develop specific recommendations for the guidance of dealers. Questions to be discussed include methods of handling trade-ins, special problems encountered, methods of developing prospects for reconditioned equipment, and inflated list prices to cover allowances.

• If You Want Freon-12, Help! Unless a couple of hundred thousand Freon-12 cylinders start circulating regularly between wherever they're "hiding" and the plants of Kinetic Chemicals, we're in for another tough summer as far as the supply of that refrigerant is concerned. At last count, cylinders sufficient to hold 22,500,000 pounds of Freon-12 were somewhere in the field; that's capacity enough to keep the Kinetic plant going for at least three months. It's a serious situation, and one that can only be solved by teamwork all along the line. For a run-down on the Freon-12 picture read the piece in this month's "Here's How" department.

 Humidity, Germ-Killer. Here's a bit of information that air conditioning men should treasure. According to a report by Science Service:

"A relative humidity of 50% swiftly kills germs in the air. This discovery by Edward W. Dunklin and Dr. Theodore T. Puck of the University of Chicago may give us a new simple way of stopping the spread of diseases like pneumonia, colds, flu and others whose germs spread through the air.

"It may also explain why such diseases spread rapidly at some seasons and not at others. It might give scientific evidence for the phrase, 'pneumonia weather', used by our grandmothers.

"The discovery was made in studies with Type 1 pneumonia germs, staphylococci and streptococci, the latter

the cause of serious sore throats, scarlet fever and other ailments. If virus and other disease germs are similarly affected has not yet been determined. By using humidity in schools, offices, theaters and the like, to check the spread of diseases, it would be so simple that it would be worthwhile if only partly beneficial as the scientists point out."

- New "Fishkeeper" Manufacturer. The Mountain State Mfg. Co., Owens Landing, Clarksburg, W. Va., has been granted the exclusive license to manufacture and sell the Chilrite "Fishkeeper", Harry A. Bortz, president of Chilrite, reports. William G. Stathers is president of the Mountain State company, and Dusten Davis is secretary.
- "Hot Item" in Refrigerants. The name "Super-Ice" may not mean much to you now, but you'll likely be hearing more about it in the future, if the claims made for it by its manufacturer hold up. It's a new moist-dry refrigerant which is said to be not so cold as dry ice, but much colder than water ice. Further, it is said to give off no gas and release no water, to be harmless to foods, and to be capable of being refrozen and reused effectively several times.

The producer, Super-Ice, Inc., of Oakland, Calif., says the new product is being used successfully for shipping flowers, yeast, ice cream, cottage cheese, biologicals, produce, frozen foods and other perishable products. With a companion product called the "Outing Reefer", an inexpensive insulated container, it's handy to take along on picnics and to use for hunting, fishing and week-end trips.

● You CAN Take It With You. A portable automatic refrigerator which operates from either a 6-volt automobile battery or 110-volt house current is being marketed by Kold-Pak, Inc., of Lansing, Mich. Light enough to be carried by one person, the unit is expected to find its greatest market with sportsmen and travelers, but is also adaptable for use by physicians, photographers, scientists, veterinarians and in bachelor apartments and hotels.

The inventor, E. E. Judge, developed the idea while on a pheasant hunting trip to South Dakota. The refrigerator is $22 \times 14 \times 15$ inches in size, with 2 inches of insulation, is powered by a $\frac{1}{15}$ hp motor. Freon-12 refrigerant is used.

• Is "M-DAY" Here? According to the National Electrical Retailers Association, household refrigerator supply is rapidly approaching demand. In fact, in many cities of 500,000 or more, NERA asserts, supply is already up to demand. Rural areas and cities under 500,000 population will likely continue in short supply on refrigeration during most of this year. The reason for this, NERA says, is in the allocation system, wherein the city dealer will continue to demand his full allocation while rural markets have greatest new demand, out of proportion to pre-war dealer sales. The moral seems to be: if you're short of refrigerators, start campaigning for more; you'll get more sooner than if you don't.

Loose and felted mineral wool shown being reclaimed from this obsolete cold room was used again in the construction of a dry ice storage room to be held at -109 F.

Be smart, Mr. Contractor— Show your prospects how to



CUT COSTS WITH INSULATION

A series of actual case histories involving the application of mineral wool and presenting facts and figures to show how adequate insulation can cut costs for refrigeration users

By Richard L. Davis
Secretary
Industrial Mineral Wool Institute

IT IS generally recognized throughout the refrigeration industry that the prime purpose of insulation in any refrigeration application is to make possible a more economical cooling installation by reducing the load on the refrigerating system (thereby lowering operating costs), or by permitting the use of refrigeration equipment with less capacity (thereby lowering initial costs), or by accomplishing both of these effects simultaneously.

In an effort to show how effectively one type of insulation, mineral wool, can be used to further these ends, the Industrial Mineral Wool Institute has compiled a series of case histories which graphically demonstrate several techniques of using the various forms of mineral wool insulation and

the actual results which can be achieved through its application.

Any of the modern forms of mineral wool—loose, granulated, felted, or board—qualifies as an excellent insulating material because, in addition to its low thermal conductivity, it will not sustain insect life, it is fireproof, it is reclaimable, and it is low both in initial and in installation cost.

There are certain types of refrigeration applications to which each of the four available forms of mineral wool is best suited. A brief summary of the uses to which each of these types is commonly put follows:

Loose wool, which is the original product without further treatment, is the basis for all other forms of mineral wool products. In this form it is an efficient bulk-fill type of insulation, readily adaptable to hand packing.

Mineral wool which has been mechanically processed into granulated form is extensively used as a fill type insulation, and is commonly installed pneumatically.

Mineral wool with a binder added forms a flexible, semi-rigid felt which is widely used in floors, walls, ceilings, and compartmented panels.

Board or block forms of mineral wool possess more strength than the other forms and are generally used where the structural strength of the insulation must support its own weight.

Referring again to the specific case histories compiled by the Industrial Mineral Wool Institute, a summary of three of these case histories—one involving a frozen food locker plant, one a dry ice storage room, and one a hotel kitchen refrigerator—follows:

CASE NO. 1 Frozen Food Locker Plant

The mineral wool insulation of a 150x50-foot frozen food locker plant in Hamilton, Ohio, is representative of this type of installation, combining both normal and low temperature refrigeration.

Four types of refrigerated spaces had to be insulated:

(1) Prechill rooms (12x12 feet and 25x37 feet) to be maintained at 36 to 40 F.

(2) Locker storage room (53x37 feet) to be maintained at 0 F.

(3) Sales and display room (27x 9½ feet) to be maintained at -20 F.

(4) Quick freeze room (17x6 feet) to be maintained at -40 F.

In insulating this one-story plant, the outside wall (brick veneer over wood sheathing) was first vaporproofed by applying two continuous hot mopped layers of asphalt-saturated membrane to the inner surface.

An interior wood shell was then constructed 11 inches in from the walls and ceiling, and 8 inches above the floor. Room partitions were constructed of sidings secured to both sides of 2x6-inch joists.

Granulated mineral wool was pneumatically installed in the voids of the walls, etc., at a density of 8 to 10 pounds per cubic foot.

The effectiveness of the insulation is shown by the following table of Btu losses, calculated for warm-side temperatures of 105 F. (actually well above average for Ohio climates, and greatly excessive for partitions between refrigerated zones).

Prechill rooms—1.5 btu/sq ft/hr. Locker storage room—2.4 Btu/sq ft/hr.

Sales and display room—2.8 Btu/sq ft/hr.

Quick freeze room—3.3 Btu/sq ft/hr.

These low rates of heat gain have been reflected in (1) low power bills which run from \$55 in winter to \$75 in summer at a power rate of 1.1 cents per kwh, and (2) a low overall capacity of installed refrigeration equipment, totaling only 17 h.p.

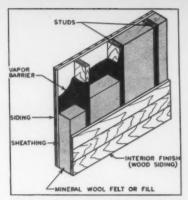
CASE NO. 2 Dry Ice Storage Room

A less general but more striking use of mineral wool insulation is in the construction of a dry ice storage room in Akron, Ohio.

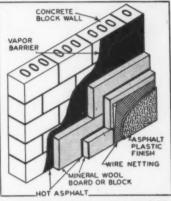
Temperatures as low as —109 F. were required in this room, due to the fact that temperatures greater than this result in loss of dry ice by sublimation, i. e., the passing of the dry ice directly from its solid state into a gaseous state. Any ice which sublimes will escape (the CO₂ gas occupies a volume 450 times larger than that of the dry ice), and an appreciable loss of product results.

The storage room measures 15x34 feet with a ceiling height of 13 feet. The outside walls are of 8-inch hollow tile. Walls were covered with extra heavy asphalt-coated roofing paper as a vapor barrier. A 16-inch thickness of felted and loose mineral wool

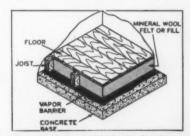
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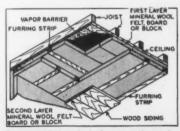
Siding, sheathing, vapor barrier, studs, insulation, and interior finishing as generally applied to a frame wall of a refrigerated enclosure.



Vapor barrier, insulation, and interior finishing as generally applied to a masonry wall.



Floors should be protected with 3 inches or more of insulation, since ground temperature usually is 50 F or higher.



Recommended method of constructing an insulated ceiling. Any vertical duct leading down into the ceiling also should be insulated to avoid condensation and drip.





DAIRY STORES

BIOLOGICAL LABORATORIES

SLAUGHTER HOUSES

SALES

FLORISTS

UP

STEPPED-UP

STEP

WALK-IN

FLORISTS

FUR STOI

METAL INDUSTR

with

FLORISTS

BAKERIE

Copeland

Copeland !

DEPENDABLE Electric REFRIGERATION

Electric refrigeration is on the march. Look around — locker plants, meat markets, groceries, florist shops, soft drink makers are hot prospects for Copeland units! It's the same story with dozens of other enterprises, new and old.

Keep pace with opportunity through Copeland, the line that's always a step ahead. You'll find it pays to sell a "name" unit, and Copeland has always been a name to win the confidence of customers.

Manufacturers of: Refrigeration Units (Open-type and Copelametic), Water Coolers, Refrigerators.

COPELAND REFRIGERATION CORPORATION, SIDNEY, OHIO

Promotion

PAVES THE WAY

When Al Reinhart decided to put his "strictly service" firm into the commercial refrigeration merchandising business he told his customers about it in every way he knew. Here is the story of his advertising efforts

HANGING the nature of your business is a relatively easy matter, but getting your customers and your prospects used to the idea is quite another story.

Al C. Reinhart, who owns and operates Real Refrigeration Service in Milwaukee, Wis., learned this fact the hard way during the past year when he decided to expand his organization from a straight service and installation firm to a combined sales and service company merchandising a complete line of commercial refrigeration fixtures.

In an effort to impress more firmly upon the minds of all his business contacts that he was now prepared to sell them whatever refrigerated cases or cabinets they might need, as well as continuing to handle their service requirements. Reinhart has resorted to nearly every promotional trick in the book.

This all-out promotional campaign started off last May when Reinhart announced his firm's move to new and larger quarters, and its acquisition of a franchise for commercial fixtures, by means of a flashy eyecatching direct mail piece which was prepared for him by the Brown & Bigelow organization, specialists in that kind of work.

Copy for this piece led off with this somewhat startling statement: "We're not satisfied . . . with the kind of service we've been giving you, our customers, in the past." It then went on to outline what the move to larger

Al Reinhart makes a selection from a group of mats for use in his phone book advertising. Note the stack of direct mail promotion pieces on the far corner of his desk.

ready reference.



quarters and the changes made within the organization would mean to the firm's customers. Enclosed with each of these announcements was a colorful red-and-white sticker bearing the company's name, address, and phone number, which the recipient was urged to paste near his telephone for

Ever since that initial announcement was mailed out to every name on his list, Mr. Reinhart estimates that he has sent out an average of about 2000 pieces of direct mail promotion each month. Some of these have been special pieces prepared with the assistance of Brown & Bigelow, but most of them have been strictly of the product plugging type

made available by the manufacturers of the various lines of commercial equipment which he handles.

This latter type of promotion, of course, is sent out selectively. That is, a promotion piece on frozen food display cabinets, for instance, is sent only to those customers or prospects definitely interested in that type of unit. The same principle applies to pieces promoting meat cases, beverage coolers, or any other specific item of equipment.

The mechanics of handling so sizeable a direct mail operation has become pretty much a family affair. The promotion pieces are delivered in bulk to Reinhart's office, but from there Continued on page 78



This eye-catching folder, printed in three colors, was sent out to inform all customers of Real Refrigeration Service that the company was now ready to sell as well as service commercial cooling equipment.



Here is where three ex-utility employees have laid out the welcome mat for all household and commercial refrigeration dealers with service problems. The bulk of this firm's service work is done for department stores, furniture stores, and other refrigeration merchants to whom service spells trouble.

Headquarters for Headaches

By Robert A. Latimer

Ten refrigerators at a time can be line tested in this busy service shop of the Fair-Jopling-Andrews firm. The shop also includes a complete refinishing department.



Three Augusta, Ga., men have built up a thriving business by shouldering the service load of many of that community's other refrigeration equipment dealers

THE crying need for competent refrigeration repair service to back up retailers who cannot equip or maintain a service department of their own has resulted in the establishment of a new "Refrigeration Repair Center" which accomplishes many things for appliance dealers in Augusta, Georgia.

The new firm is Fair-Jopling-Andrews, set up with an investment of \$15,000 by William Fair, William Jopling and Ethan Andrews, who are all former officers or employees of Georgia Power Co., local electrical utility.

The firm is utilizing the experience of Fair, formerly a refrigeration service foreman, Andrews, a top notch refrigeration mechanic, and Jopling, in charge of the sales department, to solve the problems of department stores, furniture stores, individual appliance shops and many electrical specialty houses in this Georgia city.

"We are organized to handle any type of refrigeration service or commercial appliance repair, from domestic refrigerators up to 5-ton packaged air conditioners," Jopling points out.

"We were not quite sure what to expect when we founded the concern, but we have uncovered a definite need for efficient, swift service throughout the local industry. For example, we were immediately awarded contracts with a large supermarket chain, a group of voluntary cooperative meat markets, and many department stores, restaurants, etc.

With five servicemen, Fair-Jopling-Andrews will split operations between refrigerator and other appliance overhauls for cooperating retailers, and "straight domestic service" on domestic refrigerators for Augusta

Continued on page 76



Once every 64 minutes, preceded by a deep-throated rumble and an earth-shaking growl, Old Faithful casts steam and boiling water toward the blue Wyoming sky. Its beauty and its regularity combine to make this geyser one of nature's greatest wonders. Visitors to Yellowstone National Park are awed and delighted by this natural clock which, within the memory of man, has not deviated from its self-regulated schedule.

* The kind of performance delivered by Mills Condensing Units.

Mills Condensing Units

Products of Mills Industries, Incorporated
4100 Fullerton Avenue, Chicago 39, Illinois

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1	Can your business afford to lend—without interest—substantial chunks of its operating capital?	YES	NO
2	Can you always be sure of accurately gauging your business income for a full year in advance?		H
3	Are you willing to pay in cold, hard cash for the thrill you get out of an income tax refund?		
_	answered "No" to any of the three questions above, then you		-

can narrow that ever-widening gap between "income" and "profit".

CHARITY SHOULD BEGIN AT HOME

By Harold J. Ashe

AN you count yourself among that large group of businessmen who unwittingly have been lending to their government-without interestfunds with which they can ill afford to part, even temporarily?

Don't be too hasty with your answer. Before you explode with a violent "NO!", just take a minute to think back over your record of income tax estimates and income tax payments. Then maybe you'll change your mind.

Chances are that you, like many another businessman, have been sharply overpaying on your quarterly income tax installments, thus perhaps running yourself so short of ready cash that you may at times have been obliged to pass up attractive cash discounts on purchases or even have had to seek bank loans to carry your organization over slack periods.

In recent years many taxpayers have not been greatly concerned about overpayment on estimates. Having more funds than they could profitably use in business or invest, they frequently looked upon tax refunds after March 15 as a sort of windfall. Now, however, this attitude is due for critical re-examination.

With mounting costs and with

more funds necessary to conduct business, taxpayers must become more tax conscious year around. 1948 may very likely be THE year when a maximum number of original income tax estimates get out of line and require scaling down sharply as the year unfolds.

First, net income from business is more likely to be unpredictable than in any past year. Even though the early months of 1948 may closely parallel the same months of 1947, it will be unwise to assume that the entire year will compare favorably with 1947, even though such comparison has proven valuable in past years. This is the year anything can happen, profit-wise!

Lower Taxes Are Here

Secondly, the new tax reduction law decreases the tax, even if the taxpayer's taxable income remains substantially the same as that on which the original estimate is based.

Thirdly, as discussed later in this article, even though an increase in taxable income may offset the savings effected by the new tax law, the estimate may be thrown out of line by other factors usually overlooked until tax filing time.

With these factors in mind, taxpayers would be wise to review their net earnings immediately prior to each quarterly tax installment. They then would be prepared to file an amended declaration of estimated tax. adjusting the estimate downward and thereby immediately reducing quarterly payments, if the facts warrant,

This is merely the reverse of the procedure for increasing the estimate in cases where taxable income materially increases. Amending the estimate upward is mandatory. Amending it downward is optional, but should be more generally practiced than is now the case.

Here is an actual example of how beneficial this downward revision of tax estimates can be.

A taxpayer who, in 1945 and 1946, reported a net income of around \$13,000 each year from his business, a farm, and interest on mortgages, went ahead on March 15, 1947 and filed a declaration of estimated tax based on 1946 income in the belief that his income would be substantially the same in 1947.

Meantime, his business fell off and operating costs mounted. In the fall a partial crop failure almost took him into the red on his farm venture. Only his interest on mortgages remained steady. By June he knew what his business trend was, but he still hoped for a revival to offset the slow start. It didn't materialize.

Nevertheless, each quarter he went

right on paying \$450 on an estimated \$1,800 tax. By the year's end his net income barely touched \$5,000 and, after all deductions and exemptions, his tax was around \$600. This means, of course, that following the filing of his 1947 income tax return he will get a refund of around \$1,200—probably in June or July, 1948.

Had he adjusted his estimate on June 15 to \$600, having paid \$450 as his March 15 installment, he then would have had to pay merely a balance of \$150 in three installments—\$50 each on June 15, September 15, and January 15. Thus, by the time this taxpayer receives his refund, the United States Treasury will have had the use of \$400 of his money for a full year, another \$400 for 9 months, and the remaining \$400 for 5 months.

Revise Estimate Promptly

Had the taxpayer in question retained this money which was rightfully his, he would not have been obliged to dispose of one mortgage at a discount last December to get working capital for his business.

As soon as the taxpayer sees that his income for the year is running substantially less than he believed would be the case, or that his tax will be less because of the reduced rates, he should file an amended declaration accompanying his next quarterly payment. The same form 1040ES must be used, preceding the head on that form with the word "amended" immediately before the word "declaration."

On line 5 of the declaration show the amount of the payment or payments on the original declaration, and subtract this from the new estimate, dividing the balance due by the number of remaining payments, if more than one.

Future Revisions Allowed

As many additional amended estimates may be made as there are remaining quarterly payments, if circumstances change. Or, the first amended estimate may be made as late as the due date of the final installment.

If, subsequent to making the original estimate, the taxpayer assumes the support of an additional dependent, he may be warranted in reducing the estimate by the amount Continued on page 75

Operation India

A LONG RANGE, large scale project aimed at the development of an integrated system of cold storage warehouses for fresh produce and at the cultivation of a commercial market for pre-packaged perishable foods is being launched in India by Hindustan Cold Stores & Refrigeration, Ltd. of New Delhi.

As an initial step in this vast pioneering endeavor, R. C. Mangla, a director of the New Delhi concern, recently toured the United States, gathering information on all phases of the cold storage business.

Ultimate goal of this new Indian firm, which is capitalized at approximately \$1,750,000, is to provide a better balanced diet for the Indian people—and, of course, to make money in the process. If in time it should succeed in achieving this goal, it will have immeasurably benefitted the entire Indian economy.

Eventually the cold storage program is planned to embody two 660-ton (22,000 bushel) potato storage warehouses, a warehouse for the storage of 3,000 tons of general produce and shell eggs, and a separate warehouse for the storage of "gur", a form of raw sugar.

In connection with its cold storage program, the Hindustan company also is planning the establishment of an integrated research program in food technology, especially as it is affected by cold storage. This program will include the construction of a well equipped testing laboratory.

In its broader implications, this extensive program will cover the care and handling of all types of fresh produce from field to consumer. It will include a program to be carried on through retail stores to educate the Indian people to the merits of prepackaging of fresh produce.

Mr. Mangla and his firm well realize that India is just beginning in the field of cold storage and food technology experimentation where the U.S. began many years ago, but if the program materializes as envisioned it may well become the first integrated effort of its kind in the world.

The Hindustan firm also realizes that its first and primary job is to provide for the marketing of more palatable produce for the Indian people throughout the entire year, and that the research phases of the program will then have to be integrated with its practical aspects as they are developed.

With this thought in mind, the first projects actually to be constructed will be a potato storage warehouse in Delhi and the beginnings, at least, of the company's research laboratory.

R. C. Mangla of New Delhi, India, and his American friend, Miss M. C. Julienne, of Brooklyn, N. Y., discuss plans for the operation of cold storage plants in India with Ed Wright, president of the National Association of Refrigeration contractors, and Joe Helminak (standing), NARC executive vice president.



Dealer Miner dramatically demonstrates the effectiveness of food storage cases on his sales floor by using two thermometers, one showing room temperature and the other showing the temperature in the case. Here an interested prospect listens to the story.



The refrigerated fixture dealer must—

Know the food business to sell the food business

Experience has taught this Texas dealer that to successfully sell refrigeration equipment to food merchants you must be able to talk their language . . . even better than they do themselves

CHANGES in merchandising styles and trends in foods are important things to watch in selling refrigerated store fixtures, in the opinion of P.T. Miner, manager of Miner Sales & Fixture Co., Dallas, Tex.

These changes may precede or may come after visible changes in public buying habits, he points out, but in either case the alert fixture dealer will tailor his sales approach accordingly.

The commercial refrigeration deal-

er who is selling the meat markets, super markets, and grocery stores must be in a position to advise his customer and to help him select the equipment which will give him the most service for the longest time, Miner feels. That simple system helps to keep the customer's confidence and is an important factor in bringing him back when he again is in need of equipment.

The average food retailer, according to Miner, needs a case large enough to carry a reserve supply of merchandise, because wholesalers are gradually working away from the practice of making frequent deliveries.

This trend started during the war when deliveries were definitely restricted, and now many wholesale food firms have discovered that they can serve their retailers with fewer deliveries and less expense if the retailer cooperates by stocking more merchandise.

If the retailer does not protect himself by buying in larger quantities, he then faces the possibility of losing valuable sales through not having in stock the items which his customers desire. This violates, of course, one of the cardinal rules of merchandising, which is never to make it necessary for your customer to seek your kind of merchandise elsewhere—he may like the new place better.

This and similar slants on successful food merchandising need to be brought out by the commercial refrigeration salesman in talking over his customers' needs, Miner believes.

Some of the war veterans now going into the frozen food or grocery business have had no experience whatever, Miner points out, and these prospects need special treatment and advice. The commercial refrigerator dealer who is building his business on a long-term basis must be prepared to give it.

Little need be said about the rapidly growing interest in frozen foods, Miner comments, except to point out that figures from a recent survey indicated that some 390,000 merchants throughout the country want to get into the frozen food business.

Also important among various trends in the food merchandising field, according to Miner, is the gradual transformation of the corner



Sales features of a self-service frozen food display cabinet are pointed out by Miner to another potential customer. Miner backs up this product information with sound advice on the latest food merchandising techniques and trends.

By L. H. Houck

grocery. The pressure of competition is rapidly developing this old neighborhood standby into an efficient merchandising operation, complete with glass front, white aprons, and the latest thing in refrigeration equipment.

Super markets and specialty shops also are going through an interesting cycle which is still unfolding.

"New Blood"-New Trends

Besides the influx of "new blood" into the grocery business (one grocery journal has estimated that 350,000 ex-servicemen would open grocery stores), the return to normal transportation also is serving to change the trend of food merchandising.

Lack of transportation during the war, Miner points out, helped build the volume of the neighborhood stores. Now these stores are faced with the necessity of improving their techniques and expanding their services if they are to successfully combat the inroads of the larger super markets and maintain adequate volume to assure comfortable profits.

Miner is firmly convinced that the salvation of the neighborhood mer-

chant lies largely in his ability to offer a wider variety of new foods and to merchandise them in a pleasant and friendly atmosphere. This need accounts for a good share of the huge demand for refrigerated display and sales cases of all types.

Shifts in population also have a direct bearing on food sales.

In normal times, according to statistics, the average independent merchant experienced a complete change of customers every five years, due to the normal shift in population. This shift is progressing at a much higher rate now. For this reason, the experienced merchant who says that his customers are not interested in certain types of new foods may not actually know what he is talking about.

It is the job of the refrigeration salesman to point out the significance of these facts to his customers and prospects. Miner, in fact, thinks that it is a good idea to talk over such sales points and merchandising ideas with the prospect even though his pencil may be poised above the dotted line. He feels that it keeps the dealer or salesman in practice.

Here is an actual incident which illustrates how effectively Miner puts

into practice the progressive merchandising policies which he preaches.

The owners of a "papa and mama" store from a distant Texas town came in to Miner's sales room one day to look at new refrigeration fixtures, particularly in the frozen food line.

They told their story. During the war, and before, they had always enjoyed more demand than merchandise. Lately, however, they had noticed an alarming drop in volume, despite the fact that merchandise, for the most part, was more plentiful than ever before.

Sales Slump Solution

They attributed this rapid decline to the fact that most of the people in that town were becoming "frozen food minded". Consequently these store owners finally became convinced that they must install the necessary fixtures to handle this type of merchandise if they were to remain in business at all.

By the time that they reached this decision, however, it was almost too late. They had waited until their resources had dwindled so drastically that they no longer had the cash to lay on the line for this new equipment.

"A Stitch in Time . . . "

Right here, Miner believes, is a point worth remembering for all refrigerated fixture dealers and salesmen. It is important that the food merchant be convinced of the wisdom of adding such needed new equipment when he first detects a downward trend in his sales volume and while he still has the resources to purchase this equipment.

It must be remembered that such downward trends often are the starting point of movements which adversely effect merchandising conditions in entire neighborhoods. They are the forerunners of empty store buildings—and of depleted markets for the refrigeration dealer.

But getting back to the store owners who were seeking Miner's advice, they were sorely in need of credit. Upon investigation it developed that their past record was good. To double check the situation, Miner personally visited their community and surveyed the whole merchandising situation there. The results of this survey con-

Continued on page 63

ABOUT People

C. S. "Chet" Stackpole of Baltimore, Md., has been appointed vice



president and general sales manager for Airtemp Div., Chrysler Corp. Formerly manager of merchandising and domestic sales with Consolidated Gas Electric Light &

Power Co. of Baltimore, Mr. Stackpole has had many years of experience in the sales and merchandising field. He joined the Baltimore utility in 1928, after a number of other connections in the utility field. Stackpole has been extremely active in affairs closely allied with his work. He is a vice president and chairman of the residential section of the American Gas Association, vice president of the Sales Executive Council of Baltimore, a member of the American Society of Refrigerating Engineers, and a member of the sales personnel committee of the Edison Electric Institute.

Mason M. Roberts, formerly factory manager of Frigidaire Div.,



Roberts

General Motors
Corp., has been
appointed general
manager of Frigidaire Div. to succeed E. R. Godfrey, who has
been appointed
group executive
in charge of the
corporation's
Dayton and

household appliance divisions. R. V. Polen, former assistant factory manager, has succeeded Roberts.

M. A. Boyle has been appointed sales manager of the solder division of Alpha Metals, Inc., Brooklyn, N. Y. Boyle steps up from the post of sales promotion and advertising manager, a position he has held since joining Alpha two years ago. As sales manager, he will continue his duties as a traveling consultant to manufacturers.

A. V. "Pete" Petersen has been appointed sales manager of the south-



Petersen



Pierce

eastern district for Par Compressor Div., Lynch Corp., with headquarters at Atlanta, Ga. Petersen spent the past year and a half as assistant to R. L. Sears, director of sales for the division, in the Toledo offices. Cal Pierce, formerly sales manager of the southeastern district, has been transferred to the west coast in a similar capacity, with headquarters at San Francisco.

Roger Sprague has been transferred from the St. Louis district of



Sprague

Leslie

Baker Ice Machine Co. to the company's home office in South Windham, Me., where he will act as special representative in the sales department.

Sprague has been succeeded as St. Louis district manager by Lee C. Leslie, a veteran of many years in the refrigeration and air conditioning industry.

John M. Bess has resigned as president of Refrigeration Corp. of America to devote himself to other interests, as yet unannounced. Bess continues, however, as a director of Noma Electric Corp., of which Refrigeration Corp. of America is a wholly owned subsidiary. Harvey Farber, who has been closely associated with Bess for more than 14 years and active in the development of Refrigeration Corp. of America, has been appointed vice president of that organization, in charge of all sales operations.

Russell E. Davis has been appointed representative for McQuay, Inc. in the St. Louis territory. This territory consists of eastern Missouri, western Illinois, and most of Iowa. Prior to accepting his present position with McQuay, Davis was southern Illinois sales representative for Thermorite Corp.

Nine new executive appointments and personnel transfers, together with



Beck

changes in the organizational structure of Frígidaire's commercial refrigeration and air conditioning sales department, have been announced by W. F. Switzer, commercial sales manager.

The department will function with five sales sections, namely: ice cream cabinet, air conditioning, national business, special applications, and a new commercial product sales section. The latter will include general commercial, water and beverage cooler, farm, locker, and case and fixture sales.

H. A. Beck, formerly ice cream cabinet sales manager, has been named assistant to Switzer. Beck, a veteran with 25 years of experience in his field, joined Frigidaire in 1923. Replacing Beck as ice cream cabinet sales manager is P. W. Budworth,

formerly director of government contracts in Washington, D. C.

Byron C. Wagner has been appointed manager of the new commercial product sales section. Appointed manager of the new comsales manager is G. H. Ewing, formerly manager of case and fixture sales. Two other new members of the product sales section are R. A. Blakelock and Charles Purnhagen, both transferred from the product applications section.

J. A. Smith, formerly manager of farm and locker sales, has been named to serve as assistant manager of product applications. L. E. Smith, formerly manager of water and beverage cooler sales, has also been assigned to the product applications section staff.

I. A. (Irv) Wilson has been named sales manager of Superior



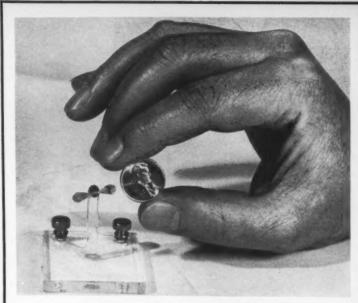
perior in 1943 as a factory representative, covering the Pittsburgh area. Later he became midwestern representative with

ing the Pittsburgh area. Later he became midwestern representative with headquarters in Chicago, and since 1945 has been manager of Superior's Chicago office and warehouse.

S. James Krakow has been appointed director of sales of the ice cream cabinet division of Crown Refrigerator Corp., Metuchen, N. J. Krakow previously had been associated with Frostedaired Corp. in a similar capacity.

C. Wesley Alcott, Jr., has been appointed field engineer for Alco Valve Co., in the New York City area, with headquarters at Alco's New York office in the Chanin Building.

Joseph R. Siegert has been appointed eastern states district sales Continued on page 60



The world's smallest motor is dwarfed by a penny.

Midget Motors

THE SMALLEST electric motor in the world—so small that a half-dozen fit roomily inside a lady's thimble—has been demonstrated in the United States for the first time this year.

This revolutionary motor has been made possible by a new type armature known as the "gap-ring armature".

It is the tiniest of a series of sub-miniature direct current electric motors invented by J. V. and J. E. G. Eurich, brothers, of Lancashire, England. The motors, known as "Electrotor" will be manufactured and sold exclusively in this country by the Electrotor Division of United States Instrument Corp., Summit, N. J., on automatic machines invented by the Eurich brothers.

Electrotor Type No. 001 is the pygmy of all power plants. It weighs less than a gram, measures only 3/16 inch in length and diameter, requires $1\frac{1}{2}$ volts, and runs with high efficiency at a speed of 7,000 revolutions per minute. This particular size has not been engineered as a practical unit, but rather to demonstrate Electrotor size possibilities.

The smallest unit engineered for volume production is the Type 240, a motor that measures only 9/16 inch in width and $\frac{7}{8}$ inch in diameter, and weighs a mere $\frac{3}{4}$ ounce. It requires 3 to $\frac{41}{2}$ volts, consumes less power than a flashlight bulb, and has a speed of 5,000 r.p.m.

The design of the Electrotor No. 240 has many striking features. It dispenses entirely with the separate commutator and the complicated segmentary winding. Its motive power is derived from a permanent magnet and from an electro-magnet operated by a dry cell battery of the type obtainable at any electrical appliance shop.

The Electrotor consists of the gap-ring armature winding, mounted on a bobbin and spindle that revolves freely within a permanent ring magnet. The armature can be considered a horse-shoe electromagnet in which broken iron rings form the core, and the outer winding the magnetic coil. The contact points on the armature, whose position relative to the armature gap in the core plainly determine the flux distribution in these broken iron ring cores, are, in effect, the brushes.

CONTRACTORS News · Activities · Plans

While The Refrigeration Industry is not the official publication of the National Association of Refrigeration Contractors, the Editors assign this space each month to the association. The information below is furnished, for the most part, by the offices of the association and its local affiliates.

Contractors Push for Exemption Under Wages and Hours Law

The National Association of Refrigeration Contractors is now gathering data on the operations of its members in a further move to obtain exemption for commercial refrigeration contractors from provisions of the wages and Hours regulations of the Fair Labor Standards Act.

Despite repeated efforts to straighten out the situation, the exact status of refrigeration contractors under the Act has never been clearly defined, at least on a national basis. Certain local and regional administrators of the act have in some instances ruled that employees of these firms are covered, but even at this level no clear-cut policy has been in evidence.

Local wage-hour officials sometimes point out that some employees of a commercial refrigeration firm are covered, while others are not. Likewise, an employee might be covered one week and not the next, because of the type of work on which he has been engaged.

For example, a service man who does repair work on a piece of commercial equipment under a guarantee made by an inter-state contractor would be covered, as would a switchboard operator who handles long distance calls from another state. Employees of some commercial refrigeration firms in an area might be covered, while other firms are not.

That's how uncertain the status of commercial refrigeration firms, in general, has been, and now is, under the act.

NARC, under the leadership of Nathan Edelstein, chairman of its Legislative Committee, is gathering data at the present time which it hopes will definitely establish that commercial refrigeration contractors should be exempted from the provisions of the Act.

The data which NARC is assembling from its membership includes

- (1) average annual gross business;
- (2) average number of employees;
- (3) description of a typical sale;(4) description of a typical customer;
- (5) definition of the work of a refrigeration contractor; (6) tracing of a particular transaction; that is, the receipt of a piece of equipment from a distributor, the sale of the equipment, installation, service for the guarantee period, and service thereafter.

In the series of conferences held up to now with officials of the Wage and Hour Division of the U. S. Department of Labor, Edelstein has built up the contention that a commercial refrigeration contractor should be exempt from provisions of the Act, because his customers were almost en
Continued on page 71

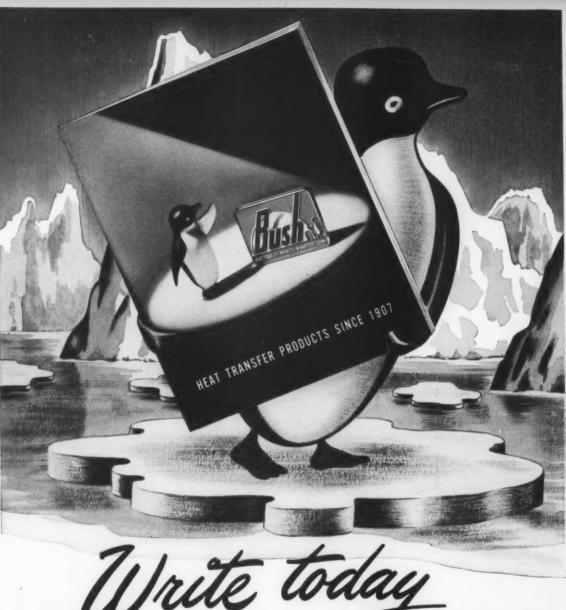
West Point Gets A New Ice Skating Rink



Newly remodeled ice skating rink at the U. S. Military Academy, West Point, is shown here. The rink was completely repiped with about 60,000 feet of standard weight black wrought iron pipe. The cooling surface is comprised of 560 runs of 1-inch pipe, each run 93 feet long. It is laid out in a grid design with 12 pipes in each grid. The headers on either side of the rink reduce in size from 6 inches to 4 inches and supply and return mains are 8 inches in size. Flow through the grids is reversed every 15 to 30 minutes while the rink is being frozen to equalize temperatures on the opposite sides.



Closeup view of the pipe headers for West Point's rebuilt ice skating rink. The new 1 in. wrought iron pipes were positioned on the old slab and connected to headers by ½-2-inch lines. A new slab then was poured. Clean-out plugs are installed at the end of each grid pipe, as can be noted in this picture. It was necessary to rebuild the cooling system because corrosion had been causing the original steel pipes to leak in several places during the last 10 years. Brine seepage into the concrete resulted in softening the ice. The steel pipes were left embedded in the original slab and cut off at the ends.



Write toda

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COMMERCIAL

SALES NEWS

While The Refrigeration Industry is not the official publication of the National Commercial Refrigerator Sales Assn., the Editors assign this space each month to the association. The information below is furnished, for the most part, by the offices of the association and its local affiliates.

National Executives Visit Arkansas Commercial Group

W. C. "Bill" Bader of Tulsa, Okla., president of the National Commercial Refrigerator Sales Association, and George B. Herman of Minneapolis, Minn., immediate past president of the national organization, were guests of honor at the March meeting of the Arkansas Commercial Refrigerator Distributors Association, Inc.

Both men spoke at the regular monthly meeting of the Arkansas group which was held at the Albert Pike Hotel in Little Rock.

Zack O. Jennings, president of the Arkansas organization of commercial refrigerator dealers and a member of the board of directors of NCRSA presided at the meeting.

Besides Bader and Herman, other

out-of-state visitors included W. B. Jennings of Memphis, Tenn., O. A. Knowles of Shreveport, La., and A. F. Mills of Joplin, Mo.

After the meeting, Bader, Herman and his wife, and W. B. Jennings and family were entertained with a buffet dinner at Whisperwood, the country home of Z. O. Jennings.

CAMPBELL REJOINS REX COLE FIRM

E. Hamilton Campbell has been appointed vice president of Rex Cole, Inc., in charge of merchandising. Prior to the war, Mr. Campbell was manager of the advertising and sales promotion department of the Cole organization.

SELF-SERVICE CABINETS BOOST ICE CREAM SALES

Some 550 million dollars worth of ice cream was sold for home use in 1946, according to the fountain-restaurant edition of "Chain Store Age," This figure represented approximately 30% of the year's total sales of 750 million gallons of ice cream.

An important factor in the continuing growth of this home market for

THE new Kroger Supermarket in Kansas City has disproved the old belief that you can't sell frozen baked goods from self-service cases.

After promoting its self-service frozen baked goods, the management learned that sales were even more promising than over-the-counter sales. Sales from a self-service case proved more than satisfactory without the personal suggestions from clerks, reports Manager Jimmy Holler.

With one self-service case, the store does from \$500 to \$600 a month in frozen baked goods. At the outset, not more than a dozen varieties of baked goods were sold; the management plans to have a larger variety in the future.

Included in the display of baked goods are chocolate cookies, pie crust, cinnamon rolls, frozen pies, biscuits, angel food cake, pound and lemon cakes, and turnovers.

ice cream has been the increased use by merchants of self-service display cabinets as a means of stimulating "impulse sales".

This vast new market, with virtual-Continued on page 80



These Arkansas commercial refrigerator distributors and their visitors gathered at the March meeting of their state association to hear talks by Bill Bader and George Herman, president and immediate past president, respectively, of the National Commercial Refrigerator Sales Association. Seated, left to right, are: H. G. Weatherall, Little Rock; W. B. Jennings, Memphis, Tenn.; A. F. Mills, Joplin, Mo.; J. P. Johnson, Malvern; Hubert Aday, Little Rock; Paul Allen, Little Rock; A. A. McLean, Little Rock. Standing, left to right, are: Tom Steed, Pine Bluff; Jake Sadler, Pine Bluff; Bill Nolan, Little Rock;

Ray Kordsmeier, Little Rock, secretary of the Arkansas association; Pat Kerby, Little Rock; O. A. Knowles, Shreveport, La.; George Herman, Minneapolls, Minn., former national president; Bill Bader, Tulsa, Okla., present national president; Z. O. Jennings, Little Rock, president of the Arkansas group.



Up and down the Pacific coast, the pass word for fine tubing is 'Superior'.

Jobbers and industrialists in the West are showing the same enthusiasm for 'Superior' tubing that it has received throughout the country. Its countless advantages are convincing more and more manufacturers that 'Superior' is the right tubing for trouble free installations. Available in straight lengths or coils, 1" O. D. to capillary .093" O. D.

For a really dry, clean and bright, easy bending and seamless tube, turn to 'Superior'. Give us the word-call, write or wire today.

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HOSPITAL

Wherever there is a hosp continuing market for a win This small, 78-bed unit is a few of the uses to whic refrigeration and air condit

AN UNUSUALLY complete hospital refrigerating system enabling the institution to make all the ice it needs from day to day, to store quantities of fresh and frozen foods under ideal conditions, and to process and freeze desirable items of food when they are in season, has been installed in the Waynesboro (Penna.) Hospital by Frick Co., which is located in that same community.

All this is in addition to the two scientifically air conditioned operating rooms equipped by Frick some years ago, and the normal complement of refrigeration equipment for pantries, diet kitchens, and laboratories.

The fact that the Waynesboro Hospital has only 58 beds and 20 bassinets is striking proof of the fact that even the small hospital provides a substantially worthwhile market for a wide variety of refrigeration equipment.

The lastest addition to the hospital's refrigeration system, the combined food storage and ice making plant, is located on the lower floor of a new two-story utility and storage building erected on the hospital grounds.

Area covered by this building is approximately 38 x 34 feet. The ground floor is divided into four cold storage rooms and a separate machine room for the refrigeration equipment. This latter room also contains the complete ice making system.

The four refrigerated storage rooms and their uses may be described briefly as follows:

(1) 50 F storage, measuring 17 x 11 x 10 feet, with Kramer air cooling unit, for short-term storage of fresh fruits and vegetables.

(2) 30 F storage, measuring 17 x 12 x 10 feet, with Kramer air cooling unit, for long-term storage of apples, etc.

(3) O F storage, measuring 18 x 8 x 10 feet, with ceiling coils for frozen foods and spare ice supply.

(4) -15 F freezer, measuring 11 x 8 x 10 feet, with 10 Stangard-Dickerson refrigerated shelf plates for quick freezing meats, fruits, and vegetable.

A small foyer in the center of the group of rooms serves as an anteroom to three of them. The remaining room, the fresh produce cooler, opens into the compressor room in order to provide ready accessibility, as it will be the most often used.

The two low temperature storage rooms have 8 inches of corkboard insulation on floors, ceilings, and walls. The other rooms are equipped with 6 inches of this same insulation.

The freezer shelf plates each measure 24 inches wide x 108 inches long. They are fed with direct-expansion ammonia.

The ice making system, as mentioned previously, is located in the machinery room. The ice freezing tank contains 15 all-welded ice cans with a capacity of 50 pounds each, so the system is capable of turning out up to 750 pounds of ice per day.

The freezing tank is equipped with VW ammonia coils and a 7-inch brine agitator. It has covers of clear native oak. The cans are raised by a traveling hoist. Most of the ice, upon being harvested, is fed directly into a Gifford-Wood crusher and is used

Potatoes, turnips, and pumpkins are among the produce stored in the hospital's 50 F cooler.



NEEDS REFRIGERATION

there is a substantial and riety of cooling equipment. excellent example of just ch institutions can put the ng equipment which you sell

The evaporative condenser, receiver, and accumulator for the produce cooling and ice-making system is located on the roof of the hospital's special utility building.

immediately. The remainder is stored in the zero-degree storage room as a backlog against emergency needs.

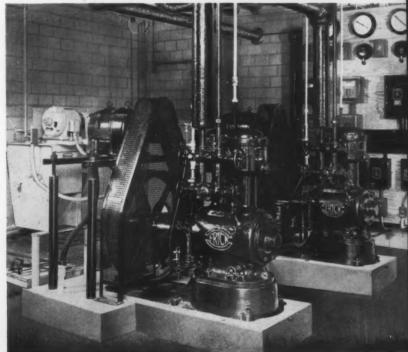
Two Frick ammonia compressors carry the cooling load for this entire installation. These machines and all moving apparatus are under full automatic control. A battery of thermostats, thermal valves, back-pressure valves, electric control valves, and magnetic starters, together with high

The machinery room houses the system's two 5 x 5 Frick ammonia compressors, with completely equipped control panel. The ice-making system can be seen in the background at the left of the photo.



Plate type shelves are used for the quick freezing and storage of meats, fruits, and vegetables





and low-pressure cutouts and a variety of safety devices, comprise the main items of this automatic control

The compressor jacket water flows into a storage tank in the room above, where a pump circulates it over the evaporative condenser which is located on the roof of the building. Close to the condenser are the usual oil trap and ammonia receiver. In

very cold weather the water circulation is automatically cut off the condenser, which then is air cooled by the fan only.

Everything about the cooling system is of the finest quality. Walls of glazed tile surround the machine room. Jamison cold storage doors protect the temperatures in the refrigerated areas.

The two operating rooms, previous-

ly air conditioned by Frick, measure $16\frac{1}{2}$ x $19\frac{1}{2}$ x $10\frac{1}{2}$ and $15\frac{1}{2}$ x 12 x $10\frac{1}{2}$ feet.

The conditioned air is introduced directly into the operating rooms through two Anemostats located in the ceiling above one corner of each operating table. The air is exhausted through the loose doors between these rooms and the lobby, from which it passes into the sterilizing room and from there through a grill to the roof.

Frequent Air Changes

The door from the hallway into the lobby is virtually airtight, as is the one from the sterilizing room into the operating room. Windows in the conditioned space of course remain closed at all times. Sufficient fresh, conditioned air is introduced to give eight air changes per hour in each room. None of the air is recirculated.

Independent and simultaneous control of temperature and humidity are provided, using pneumatic modulating devices. These control stations are located in the major operating room so that the staff can adjust air conditions quickly at any time. They are free from electric contacts which might cause a spark.

The system provides year around air conditioning. Hot water is used for reheating in summer, when necessary, while steam provides heat in winter. A water spray adds moisture to the air stream in cold weather. All air passes through a 20 x 25 x 2-inch Air Maze filter, so placed that it can be easily cleaned.

Closet Space Utilized

The air conditioning unit, which was built in the Frick shops, is located in a small closet space on the floor above the operating rooms. The 5-hp low pressure refrigerating unit stands close by. Mounted above the unit is an all-copper Acme heat exchanger and a Kramer Balance-Loader which prevents undue short-cycling of the unit during moderate weather.

High and low-pressure cutouts, pressure gages, isolation pads, and insulated suction and air supply lines are features of the installation. The controls further include a solenoid liquid valve, a back-pressure control valve, two thermostats, humidistat, preheat and reheat valves with pneumatic motors, dampers, relays, and switches.



shown, are provided with year around air conditioning.

Left-Both the

small and large operating rooms at the

Waynesboro hospital,

which adjoin as

Below—The actual air conditioning unit and the refrigerating system which powers it are located on the floor above the operating rooms.



REFRIGERATION INDUSTRY



GIBSON EXECS HEAD NEW COOLERATOR ORGANIZATION

L. W. Hamper, vice president of Gibson Refrigerator Co., has been named president of Coolerator Co., Duluth, Minn. manufacturer of electric refrigerators and freezers, and William



L. W. Hamper

J. Brown, former midwest district sales manager for Gibson, has been elected as Coolerator's vice president in charge of sales.

Election of new officers and directors was held in a special meeting of the stockholders called on March 4 following the sudden death on February 28 of John H. Ganzer, who has been associated with Coolerator since 1921, and was slated to continue as president following the purchase of the capital stock by Gibson Refrigerator Co. of Greenville, Mich.

"As previously announced at the time of the purchase of Coolerator by Gibson", Mr. Hamper said, "the company's policies will remain unchanged, and Coolerator Co. will continue to operate as a separate, corporate entity."

Other officers named include Frank S. Gibson, Jr., vice president and treasurer; Charles J. Gibson, Jr., secretary; Rex H. Sanford, assistant secretary and as-

SAFE-WAY ASSUMES MANAGEMENT OF ICEBERG LOCKERS

Iceberg Lockers, Inc., manufacturers of refrigerated food locker units, has been placed under the management of Safe-Way

Food Locker Co., Chicago.
This affiliation will have a far reaching effect, since it now means that the Safe-Way firm, largest manufacturer of conventional frozen food lockers in the United States, will combine its facilities and personnel to effectively market the Iceberg refrigerated locker line.

Iceberg Lockers, Inc., is the only company in the U.S. that will manufacture these units exclusively under the existing various patents.

sistant treasurer. Directors are Charles J. Gibson, L. W. Hamper, Frank S. Gibson, Jr., Charles J. Gibson, Jr., and William J. Browne.

All of the officers and directors have devoted their entire careers to the domestic refrigeration business and are well known in the industry.

In assuming his new duties as executive head of Coolerator, Hamper will also retain his position as vice president of Gibson Refrigerator Company. He has been associated with Gibson for the past 15 years.

Charles J. Gibson, new Coolerator director, is president of Gibson Refrigerator Co.

REPRESENTS SOLDER FIRM

Senreb Sales Co. of New York City has been named sales representatives for the Alpha solder line of Alpha Metals. Inc.

The Senreb organization will represent Alpha in the territories of New England, New York state and northern New Jersey.

ASRE TO MEET MAY 31-JUNE 2

Nine technical papers on as many fields of refrigeration will be the feature of the 35th spring meeting of the American Society of Refrigerating Engineers to be held in Swampscott, Mass., May 31 to June 2. The Boston section of the society will act as host for the occasion.

Headquarters for the meeting will be the New Ocean House which overlooks the Atlantic Ocean. Recreational facilities at the hotel will feature golf, tennis, riding, boating, fishing, and archery.

The nine papers scheduled for the technical program will include several on recent developments on heat transfer techniques, detailed description of the new "sniffer" type refrigerant leak detector and a paper on ultra low temperature installation. The technical program is under the direction of C. M. Ashley, Carrier Corp. engineer and ASRE program chairman.

M-H SALES TOP \$60 MILLION IN '47

Sales in 1947 for Minneapolis-Honeywell Regulator Co. reached \$60,596,-021, establishing a new peacetime record.

More than one-half of the company's sales during 1947 were made on products newly designed or re-designed since 1939 and introduced during and following the war.

During the past year alone, the firm put on the market 60 new instruments and control systems for heating and air conditioning.

The company now spends nearly as much for research and engineering as the company's entire net income only 10 years ago. Net income for 1947 was \$1,574,366 above 1946.

HILDRETH IS NEW REMA PRESIDENT

H. F. Hildreth, sales manager, refrigeration specialties division. Westinghouse Electric Corp., was elected president of the Refrigeration Manufacturers Association at its annual directors' meeting in Chicago, April 1 to 3. He succeeds E. M. Flannery, vice president of Bush Mfg. Co., as head of the association which has become the largest group of manufacturers in the mechanical refrigeration and air conditioning industry with 115 mem-

Other new officers elected at this meeting were: K. B. Thorndike, Detroit Lubricator Co., vice president; R. H. Israel, Virginia Smelting Co., treasurer; G. M. Kingsland, Minneapolis-Honeywell Regulator Co., secretary.

These new officers, with Flannery, retiring president, become the association's executive committee for the coming year.

New directors, elected at this meeting, are P. L. Craft, Mueller Brass Co.; Jas. F. Dailey, Typhoon Air Conditioning, Inc.; H. T. Jarvis, Refrigeration Engineering, Inc.; J. K. Noel, Jr., Victor Products Corp.; H. R. Roberts, Whiting Corp.; R. L. Sears, Lynch Mfg. Corp.; W. J. Stelpflug, Hussman Refrigeration, Inc.

Continuing to serve as directors are G. E. Graff, Ranco, Inc.; F. J. Hood, Ansul Chemical Co.; R. H. Luscombe, Penn Electric Switch Co.; John M. Schlemmer, General Controls Co.; W. A. Siegfried, Superior Valve & Fittings Co.; Hermann Spoehrer, Sporlan Valve Co.; and E. A. Vallee, Automatic Products Co. R. Kennedy Hanson continues as executive secretary.

WESTINGHOUSE SETS NEW SALES RECORD

With shipments of its products at a record level for peacetime, net sales billed by the Westinghouse Electric Corp. for 1947 amounted to \$703,154,334.

In dollar value, the company's 1947 shipments exceeded all previous records in peace or war with the single exception of the peak war production year of 1944, when output totaled \$830,480,435.

Net income in 1947 amounted to \$48,806,417 equal to a fraction less than 7% return on total sales. New orders received in 1947 amounted to \$849,-930,945 compared with \$624,672,985 in 1946. At the end of 1947 the backlog of unfilled orders totaled \$685,340,339 compared with \$589,583,459 in 1946.

COOLING FIRM SHIFTS KEY PERSONNEL

Leslie P. Hanson has been elected vice president in charge of sales for U. S. Air Conditioning Corp. Minneapolis, in a shift of personnel which included three other appointments.

Hanson has been with

the firm for 19 years. He was sales manager prior to his elevation by the board of directors to the post of vice president.

Other appointments by the company include; Harold Goodman, assistant to the president; Raymond A. Nelson sales representative in the Twin Cities; C. S. Kessler, manager of the service organization.

SHERMAN MOVES TO LARGER QUARTERS

Charles Q. Sherman, eastern division manager for United Refrigerator Co., St. Paul, Minn., manufacturer of reach-in refrigerators, bottle coolers, frozen food equipment, ice cube makers, and other refrigerated equipment and the Stanley Knight Corp., Chicago manufacturer of soda fountains and luncheonette equipment, has moved to larger quarters at 19 West 44 St., New York City.

Twelve hundred fifty square feet of floor space will be devoted exclusive-ly to the display of the above equipment, not only to local dealers but to dealers in the eastern division who are visiting New York.

OBERC OPENS BRANCH STORES IN LANSING AND DETROIT









Two new branches in one week were opened recently by J. M. Oberc, Inc., Detroit wholesaler of refrigeration supplies—one in Lansing, Mich. and one on Detroit's east side. These four pictures were taken by Austin Jones, peregrinating photographer of Kerotest Mfg. Co., who managed to take in both events.

(1) Joe Oberc himself (left) poses happily with Bert Smith, manager of his Lansing branch. (2) Here Joe does a repeat performance with Clarence E. Blay, who runs the company's east side store. (3) Jean Linebaugh, a pretty art student who improved the scenery at the Lansing opening, runs afoul of the store's "semi-self-service" setup. (4) Joe talks things over with Frank Langsenkamp, Jr., refrigeration wholesaler in Indianapolis who flew his own plane up to the Lansing opening, Floyd Duvall of Ansul Chemical Co., and Ed Germaine, vice president of the Oberc organization.

COOLING EQUIPMENT SHIPMENTS HOLD UP IN FOURTH QUARTER

Shipments of complete air conditioning equipment and components and accessories for air conditioning and commercial refrigeration equipment were valued at \$43.2 million during the fourth quarter of 1947, according to the Bureau of the Census, Department of Commerce. This figure showed practically change from the \$43.9 million shipped during the third quarter of the year.

Shipments of the major classes of components and accessories remained substantially the same as the preceding quarter. However, shipments of self-contained air conditioning units decreased 33%, from \$9.1 million during the third quarter to \$6.1 million during the fourth quarter; and shipments of icemaking machines dropped 10%, from \$628 thousand to \$564 thousand.

The fourth-quarter report covers the activity of 69 manufacturers of components and accessories and complete air conditioning equipment, and the data are believed to represent substantially all producers.

Air Conditioning Equipment and Components and Accessories for Air Conditioning and Commercial Refrigeration Equipment: Summary of Shipments by Major Class of Product, Third and Fourth Quarters 1947

Fourth Owenter 1947 Shinner of Complex Vision

	Fourth	Quarter 1	947—Sh	ipments o	ments of Complete Units							
Product	То	tal	Dom	estic1	· Exp	ort ¹						
	Number	Value (dollars)	Number	Value (dollars)	Number	Value (dollars)						
Section I-	-Components and Accessories											
TotalCondensing units	279,063	43,245,295 20,648,840	261,420	38,535,401 18,080,701	17,643	4,709,894 2,568,139						
Ammonia refrigerants	457 278,606	624,011 20,024,829	363 261,057	512,233 17,568,468	94 17,549	111,778 2,456,361						
Air cooled	267,687	16,441,080	251,252	14,552,598	16,435	1,888,482						
Open type	82,000 185,687	8,386,209 8,054,871	65,761 185,491	6,516,195 8,036,403		1,870,014 18,468						
Water cooled	10,919	3,583,749	9,805	3,015,870	1,114	567,879						
Compressors and compressor units	173,896	9,416,922	160,648	8,262,359	13,248	1,154,563						
Ammonia refrigerants	1,377 172,519	2,734,402 6,682,520		2,062,310 6,200,049		672,092 482,471						
Centrifugal refrigeration machines	89	2,210,011	81	2,089,177	8	120,834						
Heat exchanger equipment		10,969,522		10,103,164		866,358						
Evaporative condensers	1,267 26,858	1,546,826 4,089,237		1,392,198 3,660,289		154,628 428,948						
Air conditioning	2,977 23,881	1,124,767 2,964,470		1,024,756 2,635,530		100,008 328,940						
Other heat exchanger equipment ³	***	5,333,459		5,050,67	7	282,782						
Section II—Self-Contained	Air Cond	litioning U	Jnits and	Ice Maki	ng Mach	ines						
Self-contained air conditioning units	9,891	6,105,502	8,022	4,998,156	1,869	1,107,352						
Room typeOther than room type	4,626 5,265	1,297,043 4,808,459		821,13 4,177,010		475,909 631,443						

² Continental United States.
Includes Canada, Mexico, and United States territories.
³ Includes condensers and liquid coolers, shell and tube and shell and coil types, as well as fin coils (heating and cooling) and plate type evaporators.

564,466

2,504

PEREFECOLD MEN GET TYLER TRAINING

To familiarize Perfecold Refrigeration Co.'s California dealers with the 1948 Tyler line of refrigeration products, Tyler Fixture Corp. conducted its first sales school on the Pacific Coast at the Perfecold offices in Los Angeles.

More than 100 Perfecold dealers and salesmen from all over California attended the two-day session which featured new equipment demonstrations, instruction in refrigeration merchandising, sales promotion, store planning, equipment servicing, and general discussion periods on Tyler and HarderFreez products.

D. George Brauer, president of Perfecold of Los Angeles which exclusively distributes Tyler and HarderFreez products in California, was chairman of the school. Gay Pryor, Perfecold advertising manager, was in charge of program arrangements.

Tyler officials, including Bob Tyler, president; Fred Eaton, HarderFreez sales manager; Ed Knight, divisional Tyler manager; and Carl Eliason, vice-president in charge of national accounts, conducted classes.

Ice making machines.

Among the Perfecold district sales managers who attended the school were A.

S. Toberoff of Los Angeles. Clemens H. Kettenhofen of San Francisco, Marvin Dahl of Oakland, and Charles Bowman of Long Beach.

Perfecold dealers who were present during the two-day meetings were E. A. Hermens, J. M. Argo and Henry T. Bruneau of San Mateo; L. J. Browne and



Bob Tyler, president of Tyler Fixture Corp., D. George Brauer, president of Perfecold Refrigeration Co. of Los Angeles, and Fred Eaton, sales manager of Tyler's HarderFreez division, discuss current refrigeration trends during the recent Tyler sales school held at Perfecold's Los Angeles headquarters.

F. Jodry Smith of Santa Rosa: Ross Laurilliard of Eureka: Al Herdman and H. F. Soden of Pomona: B. P. Hemry of Martinez; Harry Braze, Robert Franklin of Fresno; Carl Hershberger, Lew Pengilly, Henry Clayton, and Larry Bert-ram of Stockton; George A. Heintz of Lodi; Joe E. Shapro of Modesto: Joseph F. Cemo of Porterville: Don O. Wilson of Riverside: Daryl F. Kayl of Merced; R. Mather and P. L. Marcyes of Marysville; R. E. Costa of San Jose; Fred Griswold of Santa Barbara; Bob Dotters and Larry Benjamin of Sacramento: John S. Slason of Watsonville: E. C. Flory, Jr. and J. M. Burke of Bakerfield; C. L. Colhert and Mack McHenry of Ventura; George Myers of Watsonville: H. B. Page of Modesto; H. E. Friedrichs of San Diego; A. R. Lee of Roseville; E. Haverty of Redlands; Bob Thomsen and B. L. Richards of Delano; H. A. Casparie of Fullerton.

McINTYRE FIRM IS UNIVERSAL COOLER WEST COAST AGENT

The McIntyre Sales Engineering Co., 635 S. Kenmore Ave., Los Angeles, has been appointed to represent Universal Cooler in the Far West in the sale and application of condensing units, compressors, systems and air-cooled condensers, announces J. P. Scott, director of sales for Universal Cooler Division, International Detrola Corp.

A newly organized manufacturers' representative concern, McIntyre Sales Engineering Co. is headed by V. J. McIntyre as president and John Zant as vice president. McIntyre has spent 17 years in refrigeration and at one time was national sales manager for Kelvinator; Zant has been Universal Cooler's sales engineering representative in the Far West for the past 10 years.

Universal Cooler's arrangements for handling West Coast sales will not be extended to other territories, Scott emphasized.

"We feel that the geographical problems of our Western territory can best be solved by turning our representation over to a company having the experience and facilities of such an organization," he said. "In our other territories, our own sales engineers from the Marion office will continue to call on our customers and prospects."

FRIGIDAIRE SALES CONVENTION GOES INTERNATIONAL

More than 400 key sales and service executives from 45 Frigidaire United States districts and 14 foreign countries recently were given an advance showing of Frigidaire's new appliance, commercial, and air conditioning product lines for 1948, during an international distributors' convention.

Advertising and selling plans were presented, on the basis that business is now facing normal selling conditions and that there is an important need for top salesmanship in the continuing success of the salesman, dealer, distributor and manufacturer.

FRIGIDAIRE JUGGLES SALES STAFF

Changes in the organizational structure of Frigidaire's appliance sales department and the appointment of two new section sales managers have been announced.

C. H. Glenny, formerly major dealer division manager, has been named manager of a newly created quantity sales division. Replacing Glenny is J. M. Rushton, formerly head of public utility sales, which will now operate as a part of the new division.

George Plumly, formerly with kitchen cabinet sales, has been transferred to the special markets division to supervise home freezer sales, replacing D. C. McCoy. McCoy, recognized as one of the foremost authorities in the country on low temperature refrigeration and food freezing, will work on special assignments out of the office of H. F. Lehman, assistant general sales manager.

Appointed as assistant to the appliance sales manager, a new position, is W. R. Miller, who formerly supervised quantity sales. W. H. Smith, has been transferred from the tax & insurance section of the comptrollers division to quantity sales to assist Glenny.

CUTLER-HAMMER ADDS MORE OFFICE SPACE

To provide additional space at the company's main plant for expanded sales and engineering activities, Cutler-Hammer, Inc., Milwaukee, has leased the office portion of the former Clark Building at 1330 West Clybourn Street in that city and moved its purchasing department and patent department from the main plant to larger quarters there.

REPRESENTS VIMCO

Dubov Sales Corp., 401 Broadway, New York City, has been appointed direct factory representative in the metropolitan New York area for the "Vimco" line of refrigerated cases.

WEBER SETS UP SALES OFFICE FOR SOUTHERN REGION

Weber Showcase & Fixture Co., Los Angeles, has announced the establishment of a southern regional sales office at 107 Camp St., New Orleans, Louisiana.

This is the second of the four regional sales offices to be established in the new national sales set-up now in effect. The first was Chicago.

E. Jack Guillory, formerly head of International Trading Co., has been appointed regional manager, in charge of Weber's entire southern sales region.

Since the end of the war, International Trading Co. has been distributor of Weber products in the southeastern states. Mr. Guillory's territory, under the new Weber setup, includes Texas, Oklahoma, Tennessee, North Carolina and all the other states to the south.

As headquarters city for the entire Southern Sales Region, the New Orleans office will be a virtual "home office" for all Weber activities in that territory. A complete showroom will be maintained and warehouse facilities provided.

PLOMB ESTABLISHES EASTERN WAREHOUSE

To expedite delivery of tools to eastern customers, Plomb Tool Co., Los Angeles, has added a warehouse at its Jamestown, N. Y., plant for stocking the complete line.

This warehouse has reduced the shipping time to points east of the Missisippi River by 1 to 20 days and has speeded deliveries to other customers by relieving the main Los Angeles stockroom.

LEAVES CENTURY AFTER 38 YEARS

Leo Schirtzinger, a veteran of 38 years of service with Century Electric Co., has retired as sales manager of that company's Cincinnati district.

Century's Cincinnati distric sales office will continue to operate under the direction of P. F. Williams and W. C. Wetlaufer.

CLOTHIER & MARSHALL FORM NEW FIRM

Van D. Clothier, manufacturers' representative in the refrigeration field in Los Angeles for the past 25 years, has incorporated as Van D. Clothier Co. and has brought into his company John A. Marshall, formerly assistant general sales manager of Wolverine Tube Div. Calumet & Hecla Consolidated Copper Co.

The organization will cover the entire far west area, according to Clothier, who will be president of the company. Headquarters will be maintained in Los Angeles, and will consist of a main office and warehouse at 1015 E. 16th.

Marshall will be vice president of the new firm and will open a San Francisco office around May 1, from which he will direct activities in northern California, Oregon, and Washington.

Thomas P. O'Connor, who has been with Clothier and who will be secretary of the company, will supervise activities in the southern California and Arizona territory.

Lines handled by the Van D. Clothier Co. include Wolverine Tube, Bush Mfg. Co., Mayson Mfg. Co., Swift Mfg. Co., American Injector Co., Kerotest Mfg. Co., McIntire Connector Co., Virginia Smelting Co., Buckeye Forgings, and Cleveland City Forge.

CROSLEY REDUCES SHELVADOR PRICES

A reduction equivalent to 7 to 16% in the retail prices of 1948 Crosley Shelvador refrigerators has been announced by Crosley Div., Avco Mfg. Corp.

Inwood Smith, manager of refrigeration, revealed this price decrease in presenting Crosley's 1948 household refrigerator line at a closed meeting of distributors from throughout the nation.

Best comparisons indicating the low prices announced for the new line, Smith said, show a \$50 or 16% difference between the 1948 M-88 model and a closely similar 1947 model, the SE-947.



IMPERIAL LINE
offers you advanced
products that speed
your work and improve
installations

. . SEE YOUR JOBBER



only refrigeration valve that has all these features:

No Springs, "Either-Way" Flow, only two

moving parts, easy fingertip action, "million-cycle" diaphragm, inlet and outTORPEDO DRIERS—The most formidable weapon in the war on moisture. Has one piece copper shell; joints are brazed; charged with dust-free Silica Gel; new metallic depth filtration element, graduated with size of drier; easy to refill.



LIQUID INDICATORS — Both single and doubleport types. Heavy glass in port hole, sealed against leakage with Neoprene gasket. The seal cap is an added precaution against leaks. Furnished with cap



FLOATS — Hi-Side Floats provide positive control of flow of refrigerant into evaporator. Steel construction, copper hydrogen brazed throughout. Internal parts are brass or bronze. Also Low-Side Float.



let ports in line.

TUBE FITTINGS—TRIPLE-SEAL Flared Fittings give extra protection against leakage due to special groove in seat. Extra length pipe threads are still further protection. Nuts, tees, and elbows made from brass forgings.



TUBING TOOLS—Speed your tubing connection work with Imperial Tube Working Tools. These outstanding tools make it easy to do faster and better cutting, flaring, bending, swedging, soldering, pinch-off, reaming, refacing.



CHARGING & TESTING— A broad line of equipment including charging lines; service valve kit for hermetic units; Hi-Lo charging and testing units—also adouble gauge unit; pressure, compound and compound retard gauges.



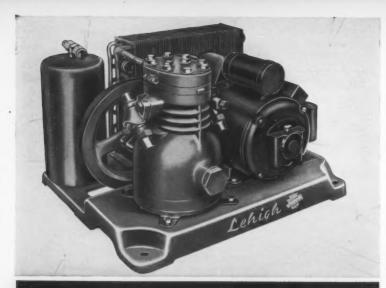
SOLDERING & WELDING— A wide range of Imperial units for all types of soldering, brazing and welding including complete outfits, individual torches, regulators, hose and hose connections. All equipment is of the high Imperial quality.



Ask for your copy of new Catalog No. 80 covering the complete IMPERIAL LINE. IMPERIAL

THE IMPERIAL BRASS MFG. CO. 536 S. Racine Ave., Chicago 7, Illinois

Fittings @ Valves @ Driers @ Filters @ Floats @ Charging Lines @ Tools for Cutting, Flaring, Bending, Pinch-Off and Swedging



Lehigh BLU-COLD AIR and WATER COOLED CONDENSING UNITS

Every Model You Need- AVAILABLE NOW-

For Every Customer Or Job

Lehigh BLU-COLD now catalogs and has available 104 models for high, medium, or low temperature, Freon or Methyl Chloride — All with accurate ASRE Ratings that can be duplicated on the job with standard equipment.

For High, Medium, or Low Temperature Freon or Methyl Chloride

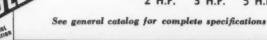
- PACKAGED AIR COOLED

 1/4 H.P. 1/3 H.P.
- MEDIUM DUTY AIR
 COOLED

 1/3 H.P. 1/2 H.P. 3/4 H.P.
- ★ HEAVY DUTY AIR COOLED
 1/3 H.P. 1/2 H.P. 3/4 H.P.
 1 H.P. 11/2 H.P. 2 H.P.
- ★ HEAVY DUTY WATER

 COOLED

 ½ H.P. 1 H.P. 1½ H.P.
 2 H.P. 3 H.P. 5 H.P.



Lehigh Manufacturing Co.
LANCASTER, PA.

EXPORT DEPT: 39 BROADWAY, NEW YORK 16, N. Y.

CUT COSTS . . .

Continued from page 33

insulates the ceiling and walls, while an 18-inch thickness insulates the floor.

An added feature of this job is the fact that a large part of the insulation was reclaimed from a now obsolete cold room.

CASE NO. 3 Hotel Kitchen Refrigerator

A large eastern hotel required a refrigerator temperature of 36 F. The surrounding temperature (kitchen) was about 100 F.

The contractor, authorized by the refrigerator manufacturer, submitted the following bids for insulating the 10x9x8-foot meat storage box. Note the effect of the different insulants on the size of the refrigerating equipment required, as well as upon the cost of operating it.

Original Bid Using Molded Insulation 4 Inches Thick

Refrigera								9		\$1185.00
Refrigera (%-hp						•				440.00
									*	\$1625.00

Cooling load5800 Btu per hour

Final Bid Using 6 Inches of Mineral Wool Insulation

\$1113.00	0	0	۰	0			0								ı
398.00	0		0		0	0	0					unit	Refrig	I	I
\$1511.00															

Cooling load5800 Btu per hour

Operating cost based on 16 hours operation per day, with ½-hp unit pulling 0.795 kw: 0.795 kw x 5840 hours per year x \$0.03 per kwh...........\$ 139.00

The hotel obviously accepted the second bid, thereby saving \$114 in initial refrigerator and refrigerating equipment costs, and \$54.50 in annual operating costs—savings of 7% and 28% respectively.

BUY FROM YOUR REFRIGERATION WHOLESALER To meet your need for "Freon" this summer-

WE MUST HAVE CYLINDERS THIS SPRING!

There is plenty of "Freon." Our facilities are geared to produce more than enough to meet any and all demands this coming summer.

But unless we obtain cylinders in which to ship "Freon" . . . unless you transfer "Freon" from cylinders held in stock or storage to air conditioning or refrigerating equipment and return the emptied cylinders NOW . . . it may become necessary to further reduce allocations.

For this reason, shipments will continue only in line with the number of empty cylinders returned. New cylinders on order cannot be obtained rapidly enough to meet the emergency. So it is to your own advantage to return the empties at once. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Delaware.







THERMOSTATIC EXPANSION VALVE

Request new Catalog 200-1

REFRIGERATION

VALVES and STRAINERS

"6 VALVES IN 1"

GENERAL CONTROLS

BRANCH OFFICES AND DISTRIBUTORS IN ALL PRINCIPAL CU

LITERATURE

The publications listed below are available to readers without charge. Simply list on the postcard provided in this issue the numbers of the items you wish to receive, and send it to THE REFRIGERATION INDUSTRY, 1240 Ontario Street, Cleveland 13, Ohio. Your requests will then be forwarded directly to the companies concerned.

271—Refrigeration Fundamentals . . . A manual designed to provide a better understanding of refrigeration fundamentals. Covers principles of refrigeration, compressors, condensers, evaporators, controls, metering devices, service analysis, etc. Available from Copeland Refrigeration Corp.

272—Air Conditioners . . . A series of 8 catalog sheets, each of which describes, illustrates, and lists complete specifications of a different model in the line of packaged air conditioning units manufactured by Kauffman Air Conditioning Co.

273—Beverage Cooler . . . A 4-page folder illustrating and describing both use and construction details of the Colbar dry beverage cooler. Available from Colbar, Inc.

274—Driers . . . Various ways of installing driers or drier-filter units are described and diagrammed in this pocket-size circular (No. 711A) which discusses the features of the "Cross-Flo" driers manufactured by Remco, Inc.

275—Commercial Refrigerators . . . A complete catalog and price list covering the line of commercial refrigeration equipment manufactured by United Refrigerator Co., including such units as beer dispensers, bottle coolers, ice cube makers, service stalls, freezers, reach-ins, and walk-ins.

276—Concrete Waterproofing . . . A bulletin describing the nature and use of "Hydropel", a liquid chemical which can be added to concretes and mortars to reduce their water absorption. Available from American Bitumuls Co.

277—Frosted Food Case . . . A broadside which illustrates and lists 48 specifications of the new 4-compartment Acco frosted food and ice cream cabinet. Available from Authorized Cabinet Co.

278—Finned Tubing . . . A 4-page bulletin (No. 102) presenting the basic design, applications, and advantages of "Cal-Fin" crossflow tubing. Physical and dimensional data for various tube sizes is tabulated. Available from Cal-Fin Co.

279—Leak Detector . . . General Electric Co.'s Type H leak detector for determining the presence of halogen vapors is covered in this new catalog sheet (GEC-238A). Features and applications are listed.

280—Cooling Tower . . . A catalog sheet providing engineering data and specifications on a small natural draft cooling tower (Series 100) produced by Marley Co. Inc.

281—Vibration Control . . . Fourteen ways of employing Armstrong "Vibracork" as a means of vibration control in the mounting of machinery equipment are diagrammed and described in this 4-page bulletin (Vc-500). Available from Korfund Co.

282—Safety Goggles . . . Four different goggle styles into which "Safe-T-Vis" lenses can be incorporated are described in this illustrated brochure available from Univis Lens Co.

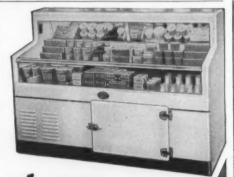
283—Heavy-Duty Hand Trucks . . . Commercial refrigeration cases and similar heavy equipment, as well as all types of household appliances, can readily be moved and handled with the "Roll-Or-Kari" dual trucks described in this pocket-size brochure. Available from Roll-Or-Kari Co.

NEW LOOK

AND FOR YEARS TO COME! THIS FINE FEDERAL

OPEN CASE

has eye appeal . . . that makes new sales climb. Advanced engineering . . . gives Low operating cost — Modern production methods give you initial low cost.



SELF-SERVE
SEVEN FOOT Self. Contained DOUBLE DUTY

- Another new Federal unit . . . same high quality
- Genuine porcelain exterior
- Mirrored Eye Level Display Kool-Brite Lighted
- Refrigerated mezzanine shelf increases display area
- Uniform temperature from full powered Self-Contained Condensing unit
- Fully air conditioned

The New Federal Line for '48 is satisfying thousands of wide-a-wake merchants.

Federal Food Preservation Products for Dairy . . . Produce . . . Delicatessen . . . Bakery . . . Frozen Foods . . . Meats, Etc. combine every last minute refrigeration feature.

Some desirable territories available on this new model and our complete line. Write for details.

Jederal REFRIGERATOR MFG. CO. COMMERCIAL REFRIGERATORS * WAUKESHA, WIS.

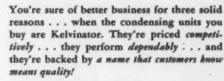
Be sure three ways...buy

Kelvinator

TROUBLE-FREE PERFORMANCE

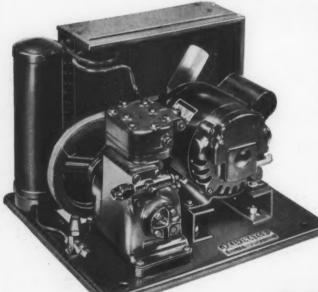
USER ACCEPTANCE

COMPETITIVE PRICE



At every stage of production, Kelvinator condensing units are precision-tested to insure unfailing performance under all conditions. This complete dependability is known by refrigeration men the country over, just as the name Kelvinator itself means the finest in refrigeration design and quality manufacture. It's the name that always sells, always satisfies.

Call at one of Kelvinator's 50 convenient supply depots for your refrigeration needs. Each depot carries a complete stock of Kelvinator-made parts and supplies, competitively priced. You'll always find fast, friendly service at Kelvinator... Kelvinator, Division of Nash-Kelvinator Corporation, Detroit, Michigan.



GET YOUR COPY!

Kelvinator's "Trouble-Shooter's Guide" for Refrigeration Service Men . . . a handy pocket-sized booklet for training additional personnel. Ask your local Kelvinator Distributor or Zone Office about it.



Kelvinator



CONDENSING UNITS OPEN AND SEALED

ABOUT PEOPLE . .

Continued from page 43

manager for the Oasis electric water cooler manufactured by Ebco Mfg. Co. Siegert's territory will include Pennsylvania, Maryland, Delaware, New Jersey, northern New York State, and Washington, D. C., with headquarters in Philadelphia.

R. B. Crawford has been elected vice president and member of the board of directors of Buildice Co. Inc., Chicago industrial refrigeration manufacturer. Crawford has been with Buildice as sales manager since September 1947, and will continue in that capacity in addition to his new executive duties.

Leslie P. Hanson has been appointed vice president in charge of sales for United States Air Conditioning Corp., Minneapolis, Minn. He has been with the firm for 19 years, and was sales manager prior to his election by the board of directors as vice

president. Three appointments also have been announced by the company: Harold Goodman has been named assistant to the president; Raymond A. Nelson has been appointed sales representative in the Twin Cities; and C. S. Kessler has been promoted to manager of the service department.

Sam C. Moncher has been named sales representative for Tenney Engi-



neering, Inc. in the metropolitan New York and northern New Jersey area. Moncher has had 15 years of experience in the refrigeration field, most recently having served as

regional manager for Electric Power Equipment Corp. He also is the author of a lengthy series of articles on air conditioning which was published in The Refrigeration Industry under the title of "Cooling For Human Comfort."

Robert West has been appointed regional sales director for the mid-



western area by Typhoon Air Conditioning Co., Inc. of Brooklyn, N. Y. Formerly with the Hussman, Worthington and Frigidaire organizations, West will supervise Ty-

phoon representatives in Illinois, Missouri, Kansas, Nebraska, Iowa, Wisconsin, and Minnesota.

Robert M. Corby, formerly service manager of Cordley & Hayes, has been appointed eastern regional manager for that company's electric water cooler line.

B. G. Hathaway has been appointed factory sales representative for Wilson Refrigeration, Inc., covering Southern California and Arizona. With Santa Monica, Cal., as his headquarters, Hathaway will extend the







It takes more than machinery to turn a strip of metal into the dependable SAFETY HEAD rupture disc. Artisans with years of experience and pride in their work contribute,

too. Each SAFETY HEAD is processed individually . . . manufactured to guard against overpressure in a specific case. Available for pressures up to 25,000 psi, for liquids or gasses, corrosive or "sweet" . . . each has a SAFETY HEAD rupture disc that will burst in tension at pre-set pressure. No other device offers such complete protection so economically. Write today for complete details . . . address the Special Products Division, Black, Sivalls & Bryson, Power and Light Building, Kansas City 6, Missouri.





requirements . . . knowledge to help simplify your production problems . . . facilities for extensive manufacturing . . . make our aluminum extrusion and fabricating departments an important source of supply for the refrigeration

- SHELF NOSINGS . HINGES TRIM FOR HOME REFRIGERATORS HINGE PLATES FOR BEVERAGE COOLERS
- COVER FRAMES FOR HOME FREEZERS . EXTRUDED TUBING AND HOLLOW SHAPES FOR HEAT EXCHANGERS



EXTRUDED METALS DIVISION DETROIT GASKET & MANUFACTURING COMPANY DETROIT 23, MICHIGAN

sales set-up in that region for Wilson farm and home freezers, milk coolers and commercial refrigeration. He was formerly factory sales engineer for Tenney Engineering, Inc.

Victor Products Corp. of Hagerstown, Md., has announced the appointment of H. S. T. Baldwin as its sales representative in the Texas territory, which includes Mississippi, Louisiana, Texas, Oklahoma and the trading area of Shreveport extending into Arkansas.

Alvin Dattle, formerly procurement manager and regional representative for Electric Power Equipment Corp. in the east central states has been appointed regional manager in the same area by Tenney Engineering, Inc. Dattle will work with jobbers and manufacturers in western Pennsylvania, Ohio, Michigan, Indiana, Kentucky and Tennessee on engineered applications of Tenney equipment.

George Romney has resigned as managing director of the Automobile Manufacturers Association to become assistant to the president of Nash-Kelvinator Corp. Romney's responsibilities will include both the automotive and electric appliance divisions. Romney, at 40, has been associated with the Automobile Manufacturers Association for the past nine years and is one of the youngest of the auto industry's leading executives.

James A. Warren, Jr. has been appointed Kelvinator zone manager at Oakland, Calif. Warren, promoted from the post of assistant zone manager at Chicago, joined Kelvinator in 1945 as field representative at Detroit.

Two new regional managers, W. L. Ledbetter and E. W. Becker, have





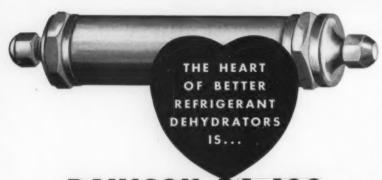
Ledbetter

Becker

been named by the unit air conditioner division of Fedders-Quigan Corp. Ledbetter will make his headquarters in Dallas, Tex., and will cover the entire southwestern territory. Becker will cover the eastern seaboard territory, with resident headquarters in Freeport, N. Y.

Donald Gaston, a veteran of 20 years in refrigeration engineering, has been appointed director of research and development of Weber Showcase & Fixture Co. Gaston, who played a major part in the development of General Electric's automatic ice-maker, is identified with several other patents assigned to G-E, including the stainless steel evaporator. After some years with Sunbeam as chief engineer of the cabinet division, he was instrumental in the development of the Coldspot line. Since the war, Weber's new research chief has acted as a consultant for several organizations, including Solar, National Research and Mfg. Co., and 1900 Corp. Gaston was vice-president of National Research and Mfg. Co.

WHERE'S THE PA-100?



DAVISON PA-100 Refrigeration Grade SILICA GEL



Your jobber stocks Davison PA-100 Refrigeration Grade Silica Gel . . in bulk for refilling in the can with the blue label, and in dehydrators charged by the cartridge manufacturer.

As the refrigerant circulates through the dehydrator, the PA-100 adsorbs (gathers-in and holds) the harmful water and corrosive acids present... without otherwise affecting the refrigerant. That's how silica gel prevents freeze-ups and corrosion in the system. And superior Davison PA-100 Silica Gel gives you the added advantages of dust-free drying, maximum capacity and freedom from caking and channeling ... the features experienced service men look for in choosing their refrigerant drying agent.

THE DAVISON CHEMICAL CORPORATION
Progress through Chemistry
BALTIMORE-3, MD.

PIONEERS AND DEVELOPERS OF SILICA GEL

Canadian exclusive sales agents for DAVISON SILICA GEL:

CANADIAN INDUSTRIES LIMITED, Sales Division, Chemical Group

KNOW TO SELL . .

Continued from page 41

vinced him that these store owners were on the right track.

Consequently, Miner decided to cooperate with them to the utmost. He engineered the remodeling of their store, he obtained for them the refrigeration equipment which they needed, and he assisted them in arranging financing for the balance of the cost over and above the down payment which they were able to scrape together.

This rehabilitation program now has been working long enough to show results. The customers are coming back. The store's volume is steadily going up. And now, thanks largely to Miner's efforts, this little market is one of the largest merchandisers of frozen foods in that entire community.

MATHIESON NAME CHANGE

Stockholders of the Mathieson Alkali Works at their annual meeting approved a change in the company's name to Mathieson Chemical Corp.

CARRIER CORP. REPORTS RECORD YEAR IN 1947

Carrier Corp. has reported a net profit of \$2,272,774 or \$3.44 per common share for fiscal 1947, as compared with \$309,439 or \$0.20 for the preceding year.

These earnings were after certain extraordinary charges, including \$789,274 of expense incident to the acquisition and partial utilization in 1947 of a sizable new plant just outside the city of Syracuse.

The corporation completed sales of \$52,910,590 during the fiscal period ended October 31, 1947, as compared with \$23,476,247 in fiscal 1946.

Both the earnings and the sales figures reported by the corporation were the highest in its history.

New business booked by Carrier during the fiscal year totalled \$47,-686,249. The comparable figure for the preceding twelve months was \$40,053,004. Carrier's backlog of unfilled orders toalled \$21,668,140 as of October 31, 1947, a decrease of \$9,967,051 from the same date a year

ASHVE LEADERS

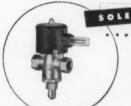


G. L. Tuve (left), director of the mechanical engineering department of Case Institute of Technology, Cleveland, and the newly elected president of the American Society of Heating & Ventilating Engineers, poses with his chief lieutenant in the organization, A. E. Stacey, Jr., vice president of Carrier Corp., who was elected 1st vice president of the national association.

NEW CONTROLS OUTLET

R. A. Lundbeck Co. has been organized to represent the Allen-Bradley line of motor controls formerly handled by Savage-Girton Co. of St. Paul, Minn.

wenty-five years of close association with the refrigeration industry is reflected in the advanced design and proved construction of Henry Products...



SOLENOID VALVES

Capacity range 1 to 20 tons Freon and 10 tons Ammonia. Most models have come-apart construction. Metal-to-metal and soft neoprene valve seats. Freon valve connections: %* to %* solder and %* to %* F.P.T. Ammonia %* and ½* F.P.T. flanged connections.



Sold by leading wholesalers

HENRY VALVE COMPANY

Control Devices, Valves, Driers, Strainers and Accessories for Refrigeration and Air Conditioning and Industrial Applications.

3260 W. Grand Ave., Chicago 51, III. . Cable: HEVALCO Chicago

Modernize your locker plant with McQuay ZER COPAK



with RIPPLE FIN coils ... practical water defrost

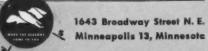
DEVELOPED originally for the locker plant, McQuay ZEROPAK units are designed to provide the high humidity cold air so necessary in frozen food storage. Secret of ZEROPAK performance is the big, efficient Ripple-Fin coil with tinned copper tubes hydraulically expanded into plate type aluminum fins for better heat transfer. Simple, economical water defrosting is a matter of minutes with McQuay ZEROPAK units. Peak coil efficiency is assured with a minimum of shutdown time for defrosting. McQuay's method eliminates the

tedious manual defrosting job connected with plate and pipe coil installations.

For remodeling or new construction you'll find ZEROPAK fits your plans. Get the facts on ZEROPAK today. See your refrigeration wholesaler or write McQuay, Inc.

Write now... for Bulletin 92 X outlining dimensions and capacities of dual purpose X series ZerOpak and Bulletin 92 L covering the heavy duty L series units.

Miguay Inc.



HEATING . AIR CONDITIONING . REFRIGERATION

New 1

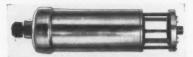
PRODUCTS

For further information on any of these products, simply list the key number at the head of each item on the special post card enclosed with this issue.

Drier-Sight Glass • • P-208

Product: "Cee-Kleer" combination sight glass, dehydrator, and

Manufacturer: B. & W. Sales Co., Cincinnati, Ohio.



Features: Combines drier, filter, and sight glass into one compact unit. Designed to assure free, full flow of refrigerant in maximum volume. Recommended for Freon, methyl chloride, and sulphur dioxide. Rated at 1/4 to 1 hp. All brass fittings and copper case. Screwed and soldered joints. Drying agent is 10 to 20 granular, screened Silica-Gel, with effective area of over 10 cu.in. Filter consists of 100 mesh screens, with over 81/8 sq.in. of effective surface, combined with 3/64-inch felt sack, SAE specifications. No by-passing. Glass is non-etching and stain proof.

Window Cooler • • • • P-209

Product: New 3/4-hp, air cooled,
room air conditioner.

Manufacturer: Airtemp Div., Chrysler Corp., Dayton, Ohio.



Features: Can be installed in any window or totally inside any room. Features Chrysler Airtemp sealed radial compressor which eliminates drive belts and shaft seals, and permanently seals out dust, dirt, and moisture. Special mountings are designed on the principle of the Chrysler "floating power" suspension for quiet, vibration free operation. Temperature is controlled simply by turning a knob. Directional air circulation. Filter removes dust and dirt from both inside and outside air. Unit may be used strictly for ventilation, if desired. Weighs less than 200 pounds, being made almost entirely of aluminum.

Console Conditioners • • P-210 Product: Console type packaged air conditioners in 1½, 2, and 3-ton

Manufacturer: Typhoon Air Conditioning Co., Inc., Brooklyn,



Features: Refinements in design include new split-pan condensate removal system that makes it possible to incorporate in a small area the oversized components found in the larger models in the line. Condensate removal pans serve a double purpose by creating an even flow of air through the cooling coil, thereby insuring maximum heat transfer over

THE Streamlined

LA CROSSE DRY STORAGE BOTTLE COOLER



FEATURING THE ROLLBACK WELL IN-SULATED LIDS—Adjustable wire partitions and shelf offers greater capacity—Sturdily constructed of heavy rust-resisting metal— Recessed base — High bake finish — Sizes 4-6-8 ft.

LA CROSSE COOLER CO

2809 Losey Blvd. So., La Crosse, Wisconsin

Export Representatives: MELVIN PINE & CO. 80 Broad St., New York 4. New York Cable Address: Eximport



WALTHAM SCREW COMPANY

Special or stock fittings and screws of brass, steel or alloy.

Send us your blue prints . . . our estimates please efficiency experts!

Anything You Want

The Way You Want It . . .



its entire area. Condensers are all copper with exterior return bends. Units are water cooled, and flexible copper tubing makes possible easy water connections. Removal of a single large panel exposes the entire mechanism.

Unit Cooler • • • • P-211

Product: "Hytsaver" cooling unit of flat design which takes up minimum of space in refrigerated room.

Manufacturer: Tenney Engineering, Inc., Newark, N. J.

Features: Designed for suspending from ceiling of refrigerated enclosure, this unit is equipped with slotted hangars for easy installation. Occupies little head room but provides uniform distribution of air by drawing air up through unit and diffusing it horizontally through two outlets after passing it through factized fin coils. Available in six sizes, all with uniform depth of 9½ inches. Capacities range from 475 Btu per hour at 1 degree temperature difference to 37,000 Btu per hour at 20 degrees temperature difference.

Electric Tube Cutter • • P-212

Product: Electric tube cutting and flaring machine for use in production operations.

Manufacturer: C. J. Unger Mfg. Co., Dayton, Ohio.



Features: Cuts, flares, and trims copper or aluminum tubing in one operation. Capable of performing more than 5000 flares in eight hours of operation. By installing a swedging mandrel in place of the flaring mandrel, it also can be used for standard swedging operations. Since tubing does not turn, the machine handles any length of tubing in sizes from ½ to ¾ inch o.d. Removable jaws for various tubing sizes are available. Powered by 1/3-hp motor.

Freezer-Cooler • • • P-213

Product: Stainless steel walk-in freezer-cooler.

Manufacturer: Refrigeration division, Amana Society, Amana, Iowa.



Features: Combines two units in one, with a walk-in cooler of 110 cuft. capacity for bulk storage of meats, beverages, and dairy products, and a 25-cu.-ft. reach-in freezer with a capacity for freezing and storing 900 pounds of frozen foods. Measures 96 inches wide, 48 inches deep, and 80 inches high overall. Shipped in sec-

NATIONAL Refrigerator Hardware

complete sets in matching designs



ILLINOIS

ROCKFORD

tions. Easily assembled. Finished in stainless steel inside and out, welded and sealed to prevent moisture infiltration. Refrigeration for cooler provided by balanced forced air unit. Horizontal heavy-duty contact freezer plates used in freezer. Each section powered by separate ½-hp hermetic condensing unit.

Truck Cooler • • • • P-214

Product: Packaged truck refrigeration unit that may be installed by the truck operator himself.

Manufacturer: Kold-Hold Mfg. Co., Lansing, Mich.



Features: Completely self-contained system. Low application cost due to simplified installation. Truck owner need only cut two square openings in truck floor, one for air intake and the other for discharge. The unit is then placed over these openings and bolted to floor. Unit contains heavy-duty "hold-over" truck plates which are connected to an air-cooled condensing unit. Cooling cycle is started by plugging unit into any 110-volt outlet, so truck may be charged wherever electricity is available. Requires minimum of space. Keeps truck interior clean, dry, and odorless.

Aluminum Ice Tray • • P-215

Product: "Mirro" aluminum ice cube tray and grid.



Manufacturer: Aluminum Goods Mfg. Co., Manitowoc, Wis.

Features: All aluminum, with stain-resisting alumilite finish. Freezes cubes quickly. A flick of the handles releases cubes instantly. Capacity is 14 full size cubes. Trays and grids are packaged in attractive colored boxes for effective display.

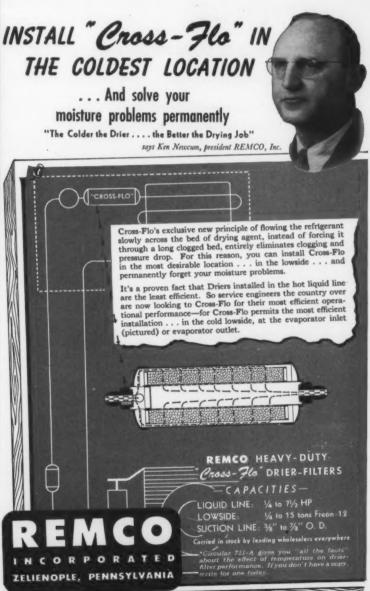
Plier Wrench • • • • • P-216

Product: New plier wrench, not generally available since the war.

Manufacturer: Bonney Forge & Tool Works, Allentown, Pa.

Features: Made in two sizes, 7-inch and 10-inch. Are fast in adjustment and easy to use. Bottom jaw becomes a hinged fulcrum which permits solid grip on irregularly shaped objects. If desired, jaws can be made to grip at the ends only.

Refrigerator-Freezer • • P-217 Product: Model 10/4 combination refrigerator-freezer, primarily designed for domestic use but also



adaptable to commercial installations in luncheonettes, cafeterias, and sandwich shops.

Manufacturer: Jordon Refrigerator Co., Philadelphia.

Features: Provides 10 cu.ft. of normal temperature storage space plus a 4-cu.ft. frozen food locker. Outside dimensions are only 68 inches in height, 39 inches in width, and 29 inches in depth. Both fresh and frozen compartments operate with one condensing unit and one temperature control. Provision also is made for the freezing of 6 trays of ice cubes.

Check Valve • • • • P-218

Product: Model 324 refrigerant

Manufacturer: Automatic Products Co., Milwaukee, Wis.



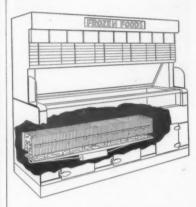
Features: When installed in suc-

tion line of the low temperature evaporator of a two-temperature system, this check valve prevents backflow of refrigerant from high to low temperature evaporator during off-cycle period. Pressure drop through this valve is negligible. Positive seal-off at all pressures is accomplished by combining a metal disc valve with a carefully finished brass seat. Both disc and seat are corrosion resistant, so valve can be used with all refrigerants. Valve can be installed in any position. Valve disc is stem-guided and held in place by light spring pressure, not by gravity.

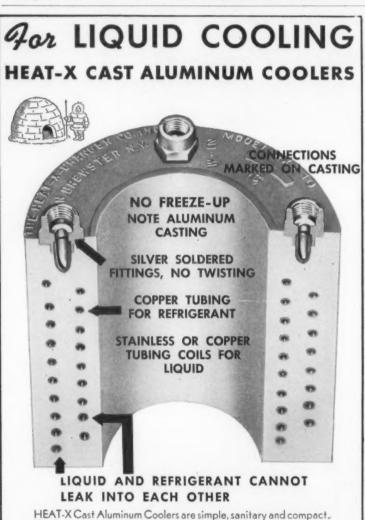
Automatic Defrost Case • P-219

Product: Open type self-service display case with built-in automatic defrosting system.

Manufacturer: Tyler Fixture Corp., Niles, Mich.



Features: Refrigeration circuit remains standard throughout, but a few tubes added to the refrigeration coil form an entirely separate arrangement for defrosting. This defrost circuit is connected to a small receiver containing Freon. At time of defrosting this fluid is electrically heated and the vapor circulates through and condenses in the defrosting tubes, thus melting the frost. Condensed fluid is automatically returned to receiver, forming a continuous cycle. Entire operation is controlled by electric timer. At pre-set time this unit automatically stops compressor and starts defrosting operation. At end of preset time this cycle is reversed. Short time required for defrosting results in practically no temperature rise in merchandise displayed. Temperature in case is controlled by a thermostat which is part of the defrost timer.



They require but a small refrigerant charge. All connections are

plugged for shipping. Sanitary operation assured with all tubing embedded in aluminum. For Water Coolers, Soda Coolers, Beer Coolers, Cooler Carbonators and Heat Exchangers write:

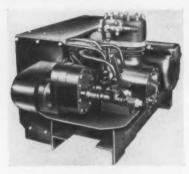
THE HEAT-X-CHANGER CO., INC.

Brewster, N.Y.

415 Lexington Avenue, New York 17, N.Y.

Truck Refrigeration Unit • P-220

Product: Hydraulically operated refrigeration unit designed and engineered for transport trucks, delivery trucks, and trailers requiring low temperatures.



Manufacturer: Hydro-Aire Corp., Waukesha, Wis.

Features: Completely automatic, this unit is hydraulically operated and controlled. No gasoline engine required. Truck motor provides power to propel hydraulic pump, which in turn operates the hydraulic motor that drives the refrigerating mechanism. No valves to open or close. Minimum operation cost. Compact and lightweight. Equipped with standby electric motor for emergencies and dock parking. No change of operating procedure is necessary when electric motor is used. Available in several sizes.

"Snap-On" Solder Package P-221

Product: Improved solder spool
with "snap-on" metal cover.

Manufacturer: Division Lead Co., Chicago.



Features: Unique metal cover slips over Divco 1-pound solder spool and snaps into place. Protects solder from dents, abrasions, and exposure to air. Also prevents uncoiling and tangling when spool is carried in tool kit. This cover furnished on Divco acid core, rosin core, and solid wire solder in a variety of popular sizes and grades.

Ice Cream Freezer • • • P-222

Product: 1948 Model 1060 Tay-

Manufacturer: Tekni-Craft, Beloit, Wis.

lor Freezer.

Features: 10-quart freezer on a cabinet with 60-gallons hardening and 20-gallons mix-storage space. With 1-hp compressor it will freeze and harden 60 gallons of ice cream in 24 hours. With 1½-hp compressor this same quantity can be handled in 16 hours. All models in line equally suited for ice cream, soft ice cream,

frozen malted, frozen custard, etc. All give 100% overrun, and have automatic controls for batch freezing and serving direct from freezer.

Home Freezer • • • • P-223 Product: "Hi-Boy" vertical type home freezer with improved interior design.

Manufacturer: Wilson Refrigeration, Inc., Smyrna, Del.

Features: Improved design provides increased storage capacity of 6.6 cu.ft., and a new plate coil as-



You get all four - with EASY-FLO BRAZED CONSTRUCTION



HERE'S HOW IT'S DONE

First, the bell-shaped part is joined to the 3%" thick header plate. Cleaned parts are brushed with Handy Flux and placed together with a preformed piece of EASY-FLO wire along the joint contour. Assemblies are then brazed with induction heat—time 40 seconds. Next, assemblies are joined to base stampings, with EASY-FLO wire preplaced as shown—time 60 seconds. It's simple and it's fast.

They are four compelling reasons why hundreds of products, both redesigned and new are now fabricated by EASY-FLO brazed construction.

A TYPICAL EXAMPLE is the Header for a radiator section shown at left—one of a number of parts redesigned by the Young Radiator Co. for EASY-FLO brazed construction. It used to be a malleable iron easting. Now it is made of 3 steel stampings and 3 pieces of EASY-FLO wire as shown.

TYPICAL RESULTS. With the highstrength, ductility and leak-tightness characteristic of EASY-FLO brazing, the Header easily satisfies these requirements. And besides its trimmer appearance, the combination of fast production, reduced machining and less weight, saved time, labor and metal also characteristic of EASY-FLO brazed construction.

HOW ABOUT YOUR PRODUCTS?

Will EASY-FLO brazed construction improve them and cut costs? We'll gladly send a field engineer to help you get the answer—or send you BULLETINS 12-A and 15 which give details. Write for them today.

HANDY & HARMAN

82 FULTON STREET NEW YORK 7, N. Y.
Idgeport, Coon. - Chicago, III. - Lee Angelies, Cal. - Providence, R. I. - Varente, Cases
Asserts in Principles Colles.

sembly. Also includes a handy freezing compartment with aluminum door and contact freezing plates. Specially designed one piece gray molded rubber throat and gray interior and exterior door gaskets insures rubber-to-rubber seal.

Bottled-Water Cooler • • P-223

Product: Bottled-water cooler intended for cup service in any location where water consumption is light or wherein plumbing facilities are not available.

Manufacturer: Temprite Products Corp., Detroit, Mich.

Features: Capacity is 3 gallons per hour cooled to 50 F in 90 F room temperature. Obtainable with either hermetic or open type condensing units to meet special application demands. Cooler and storage tank are constructed of 18-8 stainless steel and copper refrigeration coils are hotmetal bonded to the storage tank. Dimensions are 16½ inches square by 42 inches high, without bottle. Cabinet finished in baked enamel.

Rotary Pump • • • • P-224

Product: Rotary pump (Series C-175) for handling coolants, lubricating oils, hydraulic oils, kerosene, fuel oils, etc.

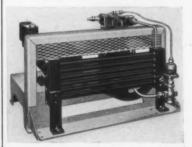
Manufacturer: Ellipse Corp., Chicago.



Features: Offers positive displacement, high volumetric efficiency, and low power requirements, due to new principle of design. Ordinary wear in use does not reduce pump capacity or pressure. Quiet operation at standard electric motor speeds eliminates need for belts and pulleys. Capacities from ½ to 4 gpm at 125 psi working pressure. Can be run in either direction without alteration. Available in foot, flange, or sump mounts.

New Par Models • • • P-225 Product: New Par condensing unit Models HW-5 and HW-7.

Manufacturer: Par Compressor Div., Lynch Corp., Toledo, Ohio.



Features: Models are water-cooled units with cleanable condensers. HW-5 is ½ hp in size, HW-7 is ¾ hp, and both are of heavy-duty type.

In addition to cleanable condenser feature, the two new models have minimum overall dimensions to accommodate installation in small areas. Complete details available upon request.



... **NOW**

a portable all-inclusive

DFN MOISTURE CONTROL UNIT

for Positive Liquid-line Drying

1. Tells if system is wet

2. Thoroughly dries it

3. Then proves it's dry!

This new DFN System of Moisture Control supersedes all present drying methods. It eliminates guesswork—dries to a positive and proven degree—prevents call-backs due to insufficient drying—saves waste and time on the job.

The unit is ready to use, easily carried from job to job, in the field, shop or factory. Available in plain panel mounting or in sturdy carrying case, as desired. Be sure to see your wholesaler for full details—or write us for detailed bulletin.

McINTIRE CONNECTOR CO.

257 Jefferson St.

Newark 5, N. J.

POSITIVE DRYING

at any liquid temperature up to

-to -20° dew point in one pass.

to -60° dew point in 24 hour operation.

VISUAL PROOF

Moisture Indicator shows degree of dryness before and after dehydrator. Tells when drier cartridge is saturated.

LOW COST DRYING

One drier cartridge, charged with Ducal Drierite, manufactured by the W. A. Hammond Drierite Company, will dry the equivalent of ten average one-ton systems. As demonstrated at the 5th All-Industry Exposition, a single cartridge has a proven capacity in excess of 13 teaspoontials of water.

CONTRACTORS . . .

Continued from page 44

tirely those who were neither engaged in interstate commerce nor producing goods for interstate commerce.

Portions of Edelstein's brief supporting this contention follow:

"Usually a commercial refrigeration man does not buy his materials, his machines, his repair items direct from the manufacturer. These materials and merchandise are generally bought from a refrigeration supply jobber, who generally has his place of business in the same State as the refrigeration contractor.

"Then this commercial refrigeration contractor uses these materials to repair refrigerators or refrigeration equipment that are installed in commercial establishments such as butcher shops, florists, bakers, candy stores, etc. At no time has he bought any material out of the State and at no time has he repaired refrigerators which are going to be used as goods that are in production for interstate commerce."

Intrastate, Not Interstate

"Even though the commercial refrigeration man purchases from a supply jobber, who in turn receives his goods in interstate commerce, the commercial refrigeration contractor has nevertheless bought this material in intrastate commerce since the goods have come to rest in commerce within the State and since the interstate character of the supply jobbers business is too remote to be imputed to the business of the commercial refrigeration contractor.

"The commercial refrigeration contractor doing work for butchers, florists, bakers, candy stores, etc., must still be considered intrastate, since such customers are not doing business in interstate commerce. . . . The reason the latter problem is being emphasized is because the opinion of the Administrator in I.B. No. 6, June, 1941, distinctly states in Section 25, that a commercial refrigeration contractor is definitely one which is covered under the Act.

"A good deal of confusion has arisen because a commercial refrigeration contractor, reading the opinion of the Administrator, to wit: that a commercial refrigeration man as differentiated from household refrigeration is covered in under the Act, does not read beyond that paragraph, and assumes that all his operations, because he is in commercial refrigeration, is covered in under the Act.

"Much confusion can be eliminated if the definition between exemption under 13 (a) (2) and non-coverage under the Act, because of the intrastate character of the business is more clearly indicated by the published opinions of the Administrator in the interpretive bulletins."

"We respectfully differ with the opinion of the Administrator as to the meaning of the word 'retail,' and its application to a commercial refrigeration contractor who does business with the ultimate consumer.

We maintain that a commercial refrig-

eration contractor, who buys his supplies from out of the State and sells or services within the State is entitled to the exemption under 13 (a) (2), since his operations deal with the ultimate consumer on a retail basis. Quoting from I.B. No. 6, June, 1941, the Administrator stated under Section 9,

What Does "Retail" Mean?

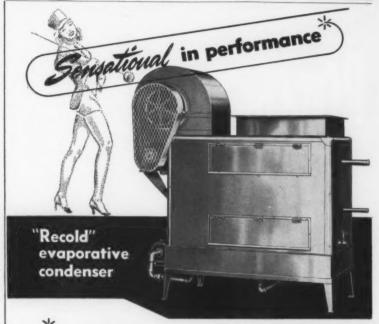
"Retail establishments . . . possess a number of common physical characteristics . . . retail establishments usually have selling counters, cash registers to ring up sales, shelves for the display and convenient arrangements of merchandise, and display windows to attract the patronage of the general public. The retail establishments maintain a stock of merchandise on

hand and normally make sales over the counter on such stock. They do not have manufacturing equipment or other machinery normally found in factories. The foregoing attributes are not rigid criteria to be applied with the mathematical precision since retail establishments vary even with respect to these matters.

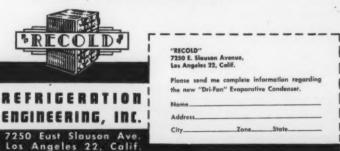
"We maintain that commercial refrigeration contractors do maintain such retail establishments as defined in Section 9. We quote from section 10 of I.B. No. 6.

"A retail establishment is characterized by numerous small sales. It sells merchandise in small quantities and at prices which are higher than the prices involved in sales by wholesalers or jobbers."

"We maintain that a commercial refrigeration contractor does have numerous



Sensational because a new principle of engineering has completely eliminated corrosion in the fan section. For years, the flow of moisture laden air in the fan section has been a major problem to every user of evaporative condensers. Now Recold brings you the new DRI-FAN Evaporative Condenser that draws the warm air in through the fan section and expells the moisture laden air through the discharge stack. A revolutionary development that is a sensation in the industry. The coupon below will bring you full information.



small sales and does buy his supplies, materials, and merchandise from wholesalers and jobbers at a lower price than sold to his customers, and sells only one or two items to an ultimate consumer. We maintain that a commercial refrigeration contractor is patronized regularly by the general consuming public since his business place is usually a store on a main thoroughfare with refrigerators on display for purchase by consumers.

"They do not refuse to sell to the general consuming public and, therefore, fall under the definition under paragraph 11 of the I.B. No. 6. The sales are made for direct consumption and are not for purpose of resale or redistribution in any form as indicated in paragraph 12 of I.B. No. 6.

"There is nothing in the Statute that states that a retail establishment must sell goods to private individuals or to ultimate consumers who are members of the general public for personal or family consumption. The act merely states that the establishment or services must be retail."

Contractors Are "Retailers"

"There is nothing in the definition of retail which says that it must be a private person or to a family. It merely says that the goods are bought in large quantities and sold in small quantities. That's what the commercial refrigeration contractor does. He sells one refrigerator at a time to an ultimate consumer. The meaning of personal for family consumption is that of the Administrator and is not stated in the Act itself. Since the Administrator uses the definition of retail establishment, the same opinions are hereby reiterated in reference to statements made by the Administrator in paragraphs 22, 23, 25 and 27 of I.B. No. 6."

NARC contends that commercial contractors should be exempt from the Wages and Hours Law.

(1) where the contractor bought all his supplies, serviced and installed all his equipment, only in his own state, and for customers who were not doing business in interstate commerce or producing goods for use in interstate commerce, and

(2) even if he did receive his supplies from out of his home state, but more than 50% of his business was with customers who themselves were exempt under 13 (a) (2) of the Act. It was contended that Congress had not meant to include small businessmen such as commercial refrigeration contractors.

Word From the Administrator

In a recent letter to Edelstein, William R. McComb, Administrator of the Wage and Hour law, declares:

"Since most of your members apparently handle only commercial accounts, and do not perform services for private consumers, their establishments could not qualify for exemption under section 13 (a) (2). However, it is possible that some of their employes may be exempt under this section in certain workweeks.

"If a particular employe is engaged solely for an entire workweek installing or servicing refrigeration equipment in retail establishments, such as delicatessen stores and florist shops, which themselves qualify as exempt retail establishments, under Section 13 (a) (2), the particular employe so engaged would be regarded as exempt for that workweek.

"But the performance during that week, of any work in a non-exempt establishment or in the contractor's place of business (for example, any repair work done off the premises of the retail establishment where the equipment is being serviced) would destroy the exemption for that week.

"Of course, the fact that an employe is not exempt under section 13 (a) (2) does not necessarily entitle him to the benefits of the Act, since the question of exemption is material only where an employe is otherwise performing work which is within the coverage of the Act."

OWNERSHIP CHANGE

The firm of Cox & Barker, commercial refrigeration contractors in Aberdeen, Wash., has been dissolved as of March 1. Arthur M. Cox has retained the refrigeration business while Mr. Barker has taken over the sheet metal department of the concern. Cox will operate as Cox Refrigeration Co. at the former Cox & Barker location, 105 W. Heron, Aberdeen.



EHLERS HEADS TWIN CITY CONTRACTORS GROUP

New officers were installed and six new companies inducted into membership at a recent meeting of the Twin City Commercial Refrigeration Contractors' Association held in Minneapolis,

New officers are Jack C. Ehlers of Commercial Refrigeration Co., St. Paul, president; Joe Parupsky of Automatic Refrigeration Co., Minneapolis, vice-president; Max Hoemke, of Cherokee Refrigeration Co., St. Paul, secretary; Phil Herman of Allied Refrigeration Co., Minneapolis, treasurer.

New members of the board of directors are Art Palen of Palen Refrigeration Co., St. Paul, and Don Franks of Franks Refrigeration Co., Minneapolis.

The six new companies which received membership in the group included Caldwell Refrigeration Co., and Holmsten Refrigeration Co., both of St. Paul, and Artic-Aire, Refrigeration Equipment Co., Martins, and Minneapolis Showcase and Fixture Co., all of Minneapolis.

E. S. MATTHEWS HEADS WASHINGTON ASSN.

E. S. Matthews, Electro-Kold, Spokane, is the new president of the Refrigeration Contractors Association of Washington, Inc., for 1948. He was elected at a recent two-day meeting in Spokane.

Neal Korthuis, Korthuis Refrigeration, Bellingham, was elected vice president; Don Kennedy, Electromatic Sales & Service, Seattle, was reelected treasurer; and A. M. Carney, Seattle, continues as executive secretary.

Directors include, besides Matthews, Harry Wirt, Spokane; K. G. Bentley, Walla Walla; Thomas Morrison, Pasco; John Lavender, Wenatchee; Clifford Ruxton, Yakima; William Vogel, Chehalis; Fred Cheatham, Olympia; Fred Van Winkle, Tacoma, and C. H. Guinn, Seattle.

WINTERS-BECKER CORP. TO SELL AIRTEMP

Winters-Becker Corp. has been appointed a four-star dealer for Chrysler Airtemp in southeastern Florida. Headquarters of the company is at 300 N.E. 71st St., Miami.

ASK NO CUT IN POWER FOR COMMERCIAL UNITS

Looking toward cushioning the public against possible impairment of public health through the conservation of perishable foods in the drought and power crisis, the Refrigeration Contractors Association of Northern California (San Francisco) has requested the State Public Utilities Commission to exempt all commercial refrigeration from power curtailment for the duration of the emergency.

Z. E. Jones, association executive vice president, has written to the

mayors of 28 key cities in the area calling attention to the position of the industry in the present crisis, following Gov. Warren's appeal for the formation of local conservation citizens' committees, as follows:

"Because of the well known vital relationship of refrigeration to public health and the preservation of perishable foods, it is respectfully requested that you appoint a member of our industry to your local committee. Such member might well represent not only the industry but also in a special sense all users of commercial refrigeration in your city."

Handiest and best Pocket Thermometer ever!

MARSH POCKET THERMOMETER

It's watch-like in size and style, Easy to read in poorest light. Highly accurate. Has "Recalibrator slide" to keep it accurate. Rugged—in handsome, polished case of durable, heavy-gauge stainless steel. Unbreakable crystal. Sold at an unbelievably low price.

No guessing at error caused by handling or room temperature as with hard-to-read glass tube thermometers. Just place this instrument in freezing compartment, close refrigerator until temperature registers, open refrigerator and instantly read temperature on clear, legible dial.

This is a handy addition to every refrigerator serviceman's kit, developed by Marsh out of 80 years' experience in precision-instrument making.

JAS. P. MARSH CORPORATION DEPT. P. SKOKIE, ILLINOIS



Actual size above (2-3/16" diam.) Typical Marsh value. \$700



Clip holds Thermometer in pocket; also serves as hanger when used in refrigerator. Clip swivels to fit any position.

tf ever knocked out of adjustment Thermometer has this "Recalibrator slide" for quickly correcting it to a thermometer of known accuracy.

Your Jobber has it in stock

Refrigeration Instruments

JERRY WESTON WITH BIDDLE TRADE BUREAU

Gerald W. (Jerry) Weston, formerly executive vice president of the National Association of Refrigeration Contractors, is now associated with the Biddle Trade Bureau in its Los Angeles office, 335 Rowan Building. The Biddle organization, which also has offices in San Francisco and San Diego, specializes in trade association management, labor relations, and catalog and pricing services.

Jerry's home address is 1431½ N. Sierra Bonita Ave., Hollywood 46.

NEW TRAIN COOLING SYSTEM OPERATES ON OWN POWER

A new railroad passenger car carrying its own complete alternating current-operated "weather factory" — entirely independent of the locomotive for its power—soon will be tested on a major railroad, it is reported by H. H. Hanft, transportation engineer of Westinghouse Electric Corp.

The recently-developed unit, built by Sturtevant div. of Westinghouse, contains its own a-c power plant and the necessary air conditioning and heating equipment to provide air that will be cooled and dried in summer, heated in winter, and electrostatically cleansed of dust and smoke all year around. On the car passengers will drink electrically-cooled water and will read by flicker-free fluorescent lights.

Use of an a-c air conditioning system in addition to reducing the drain on the locomotive's power output, also permits reducing weights of the railroad car by 3 to 5 tons, or 5 to

Heart of the thermostat-controlled air conditioning installation—which has the same refrigerating effect as the melting of eight to nine tons of ice in the car every 24 hours—are the twin 5 hp hermetically-sealed compressors carried under the car. Other principal components are the condenser, also mounted under the car, thermostats and the overheadmounted evaporator "package" consisting of blowers, evaporator and electric strip heaters.

The equipment combines to furnish 2400 cubic feet of conditioned air every minute, with two-thirds of this supply recirculated from the car itself and one-third being "make-up" air from outside the car.

SAVED BY INSULATION



Twenty-nine hundred turkeys valued at \$34,800 were stored in this main refrigeration unit at the Pollard Turkey Ranch, Puente, Calif., when fire destroyed the processing plant in which the unit was housed. Instead of being cooked to a cinder, the turkeys were found to be in perfect condition when the fire burned liself out, for the three layers of 2-inch-thick, asphalt enclosed Fiberglas which encased the cold room served as an effective barrier against flame as well as heat. As this photograph shows, when the outer layer of Fiberglas board was removed it was found that the second layer had been unaffected by the blaze, despite the fact that the plywood sheathing which comprised the cooler's exterior surface was completely burned away.

new appliance testers by MODELS 391 and 392 A.C. - D.C. Volt-Wattmeters MATHRIADATIS THAY MAY ACCURATE

Simpson

These two Simpson testers are designed for simultaneous reading of volts and watts. Each has two separate 3" square meters, one for volts and one for watts. Each has built-in cord and plug for connecting to line outlet, and receptacle for connecting appliance under test. There are no leads to connect. Readings register immediately when plugs are connected. Separate, uncrowded scales make quick, accurate readings easy. Each meter has two ranges, selected by separate toggle switches with positions clearly indicated by white figures recessed in the molded bake-lite case. The low power consumption of these instruments and their high efficiency result in negligible loss and error in reading.

Model 391 (3000 watts max.) Ranges, A.C. or D.C.

Volts: 0-130, 0-260 Watts: 0-1500, 0-3000 Sixe: 3" x 5%" x 2½" Weight: 2 lbs. Shipping Weight: 3 lbs. Dealer's Net Price.........\$30.00

Model 392 (5000 watts max.) Ranges, A.C. or D.C.

SIMPSON ELECTRIC COMPANY 5300-18 West Kinzie Street Chicago 44, Illinois In Canada, Bach-Simpson, Ltd. London, Ont. Case—\$5.00

AC-DC WATE

AC-DC VOIS

CHARITY . . .

Continued from page 39

of the tax saving such dependent represents and provided, of course, such dependent qualifies as a dependent within the meaning of the tax code. A child born as late as one minute of midnight Dec. 31, 1948 (and certainly not anticipated on March 15, 1948) would entitle the parent to a tax exemption of \$600, a tax saving of at least \$99.64, based on the new taxes.

In addition, personal deductions not anticipated at the time of filing the original estimate should be watched closely as the year progresses. These might include excessive medical bills, deductible losses, casualties, interest, taxes or other deductible items not foreseen at the time of making the original estimate, but subsequently incurred or sustained in the tax year.

COBB HEADS FARM SALES FOR FRIGIDAIRE

James R. Cobb has resigned his REA post in Washington, D. C., as assistant chief of applications and loans division, to join Frigidaire Div., General Motors Corp., as manager of farm market sales, a new post created in the appliance sales department, according to H. M. Kelley, appliance sales manager.

Kelley explained that the new farm sales section is being organized in line with current company planning, which places "more and more emphasis on the rapidly-growing farm market." Cobb will work out of the special markets division, headed by C. E. Quigley.



DETAILED procedure in placing ammonia refrigeration machines into operation is the subject covered in a completely revised Application Data Section published recently by the American Society of

Refrigerating Engineers.

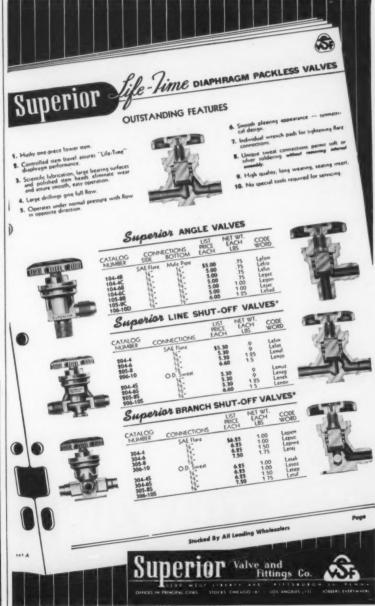
Known as AD 19-R and entitled "Operation of Ammonia Machines", this brochure includes information on the basic principles of ammonia compressors, the mechanical refrigation cycle, general erecting instructions, testing the system, starting and stopping a compressor, purging the system, and maintenance hints.

Copies may be obtained from the ASRE, 40 West 40 St., N.Y.C.

CHASE SUPPLY CO. ADDS TWO MEN TO STAFF

Carl Picker and C. L. Rogers have been added to the sales staff of Chase Refrigeration Supply Co., Chicago wholesaler of refrigeration supplies equipment.

Picker, formerly Chicago district sales manager for Mills Industries, Inc., will represent Chase in Chicago and northern Illinois. Rogers, who formerly owned and operated a refrigeration service company in central Illnois, will cover the central and southern part of the state.



HEADACHE HEADQUARTERS

Continued from page 36

housewives. There has been a tremendous demand in both fields, according to Jopling.

"We are set up to recondition anything," he explains, "as well as to handle sales for Kelvinator and McCray equipment.

"All of our service work is charged for at a straight rate of \$2 an hour, with additional charges for domestic calls. Cooperating with retailers, we will handle their refrigeration repair work, selling parts to the retail store at cost.

"There is no maximum to the amount of work we will be able to handle in the future, and we expect that eventually dealer service will outstrip our domestic work."

The Fair-Jopling-Andrews building is divided into separate departments.

At the front is a showroom for commercial refrigeration and Kelvinator domestic refrigerators, plus attic fans and ventilating fans which the company added to its line when refrigeration equipment was so hard to get.

Immediately behind the showroom is a complete radio repair shop and a small appliance repair shop. The refrigeration overhaul shop, which boasts a test line for 10 refrigerators as well as a complete paint booth and refinishing department, occupies the largest amount of space.

Speed Is Stressed

The company operates three trucks for rapid service and emphasizes speed all the way.

From the outset, utilizing the "know how" gained by utility experience, the partners have attempted to set up an "assembly line" production system for overhauling and refinishing trade-in refrigerators, which are the big "if" with many dealers. At present, the firm can completely overhaul the average refrigerator, including a new seal, valve replacement, new gaskets, and changing refrigerant at about \$35 on a mass production basis.

Costs Kept Low

"The rebuilding trade will probably grow rapidly in the next few months, Jopling predicts. "To help retailers out with the trade-in problem, we will arrange to pick up each trade-in through the warehouse, check it over, overhaul the condensing unit, and refinish the exterior and interior from \$25 to \$45, depending upon the type of paint job required, and the hardware.

"Most stores handling trade-ins so far are reselling them for \$100, and to all appearances, this market is going to pick up, due to relatively higher prices on new refrigerators. We're already handling about 10 trade-ins per week for one large department store."

Service Volume Grows

Illustrative of the importance of this new service shop to local appliance retailers is the fact that at the outset, sales of commercial and domestic refrigeration amounted to about 80% of the business. A few months later, the shop was accounting for 50% of the firm's total volume, and the percentage is growing by leaps and bounds.

Everything possible is being done to hold down refrigerator rebuilding cost by efficient transportation, overhauling and paint methods. Due to



Question:

What about THAWZONE? Is it good?

Answer:

Time-tested THAWZONE is not new ... 10 years and no change in formula ... 275 wholesalers (not counting their branches) ... many service engineers, ice cream companies, manufacturers ... dehydration, acid neutralization, prevention or reduction of oil decomposition, corrosion and copperplating ... for the old or new refrigeration system ... sales soaring!



Your nearest wholesaler can supply you

HIGHSIDE CHEMICALS COMPANY

195 Verona Avenue

Newark 4, N. J.

TRADEMARK REGISTERED U. S. PATENT OFFICE



construction of a semi-automatic paint spray booth, Fair-Jopling-Andrews have reduced refrigerator refinishing cost to an average of \$12 per box, with the labor of sanding representing the highest part of this cost.

"We can refinish a refrigerator like new, with all new hardware installed, for approximately \$30," Jopling declares, "which represents an investment of \$18 on our part."

New Compressors Stocked

In stepping up its efficiency, Fair-Jopling-Andrews has found that maintaining a stock of new compressors and selling the new compressor as a unit to the owner is a highly practical means of doing business. With new compressor installations as a typical example, a 1939 Frigidaire can be put into tip-top shape for approximately \$45, allowing a \$20 profit. However, costs sometimes run up to \$60 or \$75, which necessitates too high a resale price for the retailer to show a profit, according to Jopling.

The firm started out with three ex-G.I.'s, all with military refrigeration repairing service behind them, who were paid a flat salary of \$140, the government raising this to \$200 with on-the-job training payments. None of the men are expected to stay on under the "G.I. Bill" very long, however. with the volume of work that is now flowing in.

The company is indulging in expensive advertising promotion, even though there are already more appliance-retailer customers than can be handled. Fair-Jopling-Andrews spends \$105 a month for radio and telephone directory advertising, but in return for this sum the firm estimates that it received between \$10,000 and \$15,000 worth of business in 1947.

Promotion Pays Off

Starting out in radio promotion, the firm was fortunate in getting a spot twice a week, one of them immediately before Bing Crosby on Wednesday night. These two spot announcements per week cost the firm \$90 a month, and the telephone book \$15 a month. Both types of advertising list the many services of the firm, with special appeal to the appliance retailer with no means of handling his service work.

SAFE AT HOME!



We know and you know that this is just a good publicity stunt to get another product picture published, but as long as it's springtime and the baseball season is in full swing. we'll rise to the bait. So here's Ken Keltner, star third baseman of the Cleveland Indians, loading up his new 1948 Whiting home freezer at his Milwaukee, Wis. home prior to shoving off for spring training (or so the caption says!).

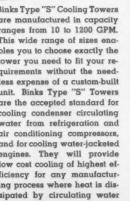
BUY FROM YOUR REFRIGERATION WHOLESALER

NATURAL DRAFT **COOLING TOWERS**

standard sizes



Binks Type "S" Cooling Towers are manufactured in capacity ranges from 10 to 1200 GPM. This wide range of sizes enables you to choose exactly the tower you need to fit your requirements without the needless expense of a custom-built unit. Binks Type "S" Towers are the accepted standard for cooling condenser circulating water from refrigeration and air conditioning compressors, and for cooling water-jacketed engines. They will provide low cost cooling of highest efficiency for any manufacturing process where heat is dissipated by circulating water or other fluids.





Send today

for bulletins describing the Binks Type "5" natural draft cooling towers in which you are interested.

BULLETIN NUMBERS:

- 30. Single Section Towers
- 31. Multiple Section Towers (one bay wide)
- 32. Large Capacity Towers
- 40. All Redwood Towers

Please state how tower will be used, also capacity required.

THERE'S A BINKS TOWER EVERY COOLING JOB

MANUFACTURING COMPANY

REPRESENTATIVES IN ALL PRINCIPAL CITIES # 3124-38 CARROLL AVENUE, CHICAGO, ILL.

PROMOTION . . .

Continued from page 35

on the work is usually done at home, with one or the other of his three young sons doing the folding and his wife taking care of the addressing.

Long a firm believer in the effectiveness of advertising in the classified section of the telephone book, Reinhart now is busily preparing for the new directory copy which will stress the firm's merchandising activities as well as its service facilities.

To point up this new phase of the company's operations even more, this new ad will feature illustrations of some of the types of refrigeration fixtures handled.

This same change in emphasis from service to merchandising has been made in the promotional copy on the calendars which the company distributes to its customers. Typical of this changeover is the case of one old calendar design featuring a pretty girl doing not much of anything. In the redesigned version, this same girl is sitting atop a gleaming meat dis-

play case. "It may be corny," Reinhart reasons, "but it's catchy. And after all that's the whole purpose of the idea anyway."

Reinhart does not believe in standardizing on any one design in calendars any more than in direct mail pieces. He uses three basic designs—one for taverns, one for meat markets, and one for all other types of customers—each of which is carefully calculated to appeal to that particular segment of the company's clientele.

Little newspaper advertising has been used by the firm so far, with the exception of occasional ads in the classified columns to promote specific types of cases.

Real Refrigeration's trucks have long been one of the firm's best ad-



vertising mediums, Reinhart reports. The six vehicles, most of which are either coupes or sedan deliveries, are painted snowy white, with the firm's name, address, and phone number in neat black lettering. These vehicles attract a surprising amount of attention as they travel throughout the city, and Reinhart can cite instance after instance of receiving telephone calls which started out like this: "Say, I saw one of your trucks on the street the other day, and I wonder..."

Typical of Reinhart's alertness in seizing promotional opportunities is one instance which occurred recently. He had noticed that invariably when he attended meetings of the several organizations to which he belongs a number of people would be looking around for ash trays before the meeting was over. And there never seemed to be enough on hand. Consequently Reinhart lost no time in ordering a



number of inexpensive plastic ash trays imprinted with the Real Refrigeration name, and these he makes a practice of distributing whenever the occasion arises.

One of his smartest stunts yet, however, is his plan to have a number of 1-page advertising broadsides on the firm's commercial equipment padded right with the service work orders, so that each serviceman, as he tears out the work order duplicate to give to the customer, will tear out one of these advertising fliers at the same time, and thus further help to spread the good word of the company's merchandising operations.

One worthwhile lesson which Reinhart has learned since he started this accentuated promotional program is that in the long run it is just about as cheap and definitely more satisfactory to work with a professional promotional printing organization such as Brown & Bigelow than it is to try to do a "home made" job. He has found this organization to be very helpful in originating promotional ideas for his firm as well as in executing those which he himself has conceived.

Obviously all this promotional ac-

REFRIGERATION SERVICE LEDGER

CARRENE NO.

METERS

CONDENSERS

STATORS

THERMOSTATS

FLOATS

RELAYS

FANS

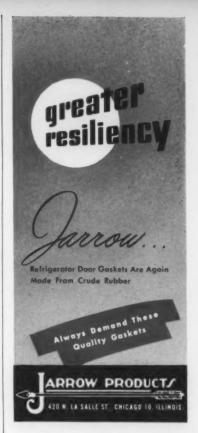
PUMPS

tivity costs money. Last year alone Real Refrigeration spent well over \$5000 on advertising and promotion of all kinds, and this year's expenditures will probably be at least that much, if not more. But Reinhart is firmly convinced that you can't make a much better investment in your company's future. In the long run he figures to get it all back—with interest.

UEI ENLARGES RESIDENT TRAINING FACILITIES

Because of the need for technical training between the high school and college levels, Utilities Engineering Institute of Chicago has announced enlargement of its technical resident training facilities. According to D. F. Borroughs, educational director, the course designed to bridge the gap between highly specialized engineering technology and simple maintenance and repair training.

The course covers physics, mathematics, mechanical drawing, blueprint reading, laboratory experiments and refrigeration theory, combined with standard practices in refrigeration field procedures.



PROFITS FOR YOU

AN AUTHORIZED GRUNOW SERVICE

can add up to only one total on your 1946 Ledger: Profits.

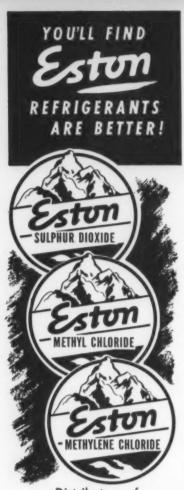
Here are the facts-

- When a Grunow Refrigerator needs repair, the owner comes to you as a recognized authority. You get the business.
 - Output of new refrigerators this year will not meet demand. Grunow Authorized Service will keep your personnel employed and help pay your overhead until the new boxes arrive.
 - Servicing refrigerators already in use will acquaint you with owners and prospects for new boxes in your locality. They will respect your advice and buy from you when new refrigerators are ready for delivery.
 - Check with us, to see if a Grunow authorized service is open in your locality.

AUTHORIZED SERVICE, INC.

4313 W. Fullerton Avenue, Chicago, Illinois

FACTORY TESTED PARTS



Distributors of FREON II-I2-22-II3

Years of use in all types of refrigeration equipment have proven Eston refrigerants are superior. All are of sustained high quality with exceptionally low moisture content. Servicemen say Eston refrigerants give better performance and more efficient operation. Eston jobbers are conveniently located. Write for complete information.

In the West it's Eston for Refrigerants

Eston CHEMICALS, Inc. 3100 East 26th Street Los Angeles 23, Calif.

COMMERCIAL SALES . . .

Continued from page 46

ly unlimited potentialities, now is being tapped by drug stores, groceries, confectioneries, delicatessens, and similar retail outlets, each of which represents a Grade A prospect for the enterprising commercial refrigerator dealer.

A potent profit story can be prepared for such prospects on the basis of a survey of West Coast super markets which reveals that ice cream which occupies only .88% of a store's total display space, is accounting for 4.7% of that store's dollar margin.

SNYDER TO DIRECT NERA COST STUDY

Richard E. Snyder of Chicago, well known marketing economist, has been retained by the National Electrical Retailers Association to direct and analyze their 1947 Cost-of-Doing-Business Study, according to C. C. Simpson, managing director of the association.

Report forms for the 1947 study

have been mailed to all members, and on May 15 NERA expects to release dealer cost information for the full year 1947, Simpson states.

He also indicates that the association has plans to inaugurate a quarterly cost study beginning in July. This survey will be made among a selected group of dealers of varying sales volume, located in different sections of the country. The survey for the year 1947, however, will include cost figures submitted by all NERA members nation - wide, the same as was done in the previous NERA cost survey.

HICKOCK NAMED DIRECTOR OF NORTHWEST BAKER

Baker Ice Machine Co., Inc., has announced the election of Harold C. Hickock as a director of its subsidiary, Northwest Baker Ice Machine Co., Inc. of Seattle, Wash.

Hickock joined the parent company in August, 1947 as general sales manager and will continue to serve in that capacity at the company's head-quarters office in South Windham, Maine.



Beauty that wins instant attention and approval . . . a wealth of engineering features that guarantee superior efficiency in years of convenient food protection . . . this is the combination that makes the BEN-HUR dealer franchise highly enviable.

Take any one of the FOUR popular BEN-HUR Models — 6, 9, 12.5 or 18 cubic foot sizes — give it a feature by feature comparison. The BEN-HUR comes out on top consistently — and proves its superiority in the home after you install it.

COMPARE THEM ALL . . . And You'll Choose The BEN-HUR Line

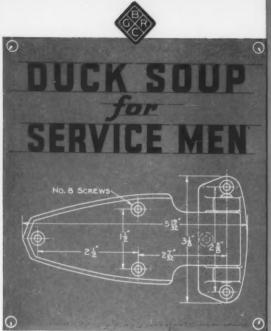
BEN-HUR MFG. CO. Dept. R, 634 E. Keefe Ave., Milwaukee 12, Wis. Powerful National Advertising . . . Complete Selling and Display Materials . . Direct Mail Sales Helps . . . Seasonal Newspaper Ad Mats . . . are all EXTRAS that make the BEN-HUR Line highly profitable.



BEN-IIII

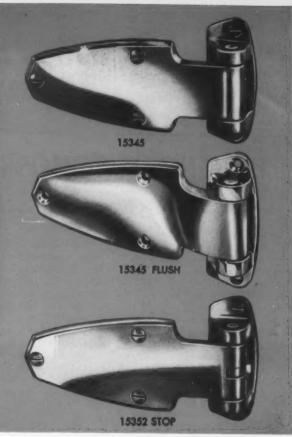
HEALTHFUL LIVING THROUG

LIVING THROUGH FROZEN FOODS



It's the easiest kind of extra money . . . replacing old, worn-out refrigerator hardware with sparkling new Grand Rapids Brass locks and hinges! Every service call spells extra-profit opportunity—a chance to double or triple your day's income. Our new installation manual tells how—gives simple, complete replacement instructions for any kind of job. See your jobber about a copy—or write direct for your free manual today!





No. 15345 REVERSIBLE HINGE. The most widely useful replacement hinge in our line . . . available NOW from your jobber in a full range of offsets.

No. 15345 FLUSH HINGE for those popular flush doors.

No. 15352 STOP HINGE. When you need it, you need it bad! You can get it now from your jobber — with 105° or 135° Stop, in a full range of offsets.

DESIGNED TO FIT THE JOB. Above you'll see three versions of just one of the many hinges available in the Grand Rapids Brass line. Our new installation manual pictures many other hinges and locks—gives full information how to choose and order hardware for any replacement job. With this information in your kit, you can go to town. Get ALL the facts TODAYI

by America's Quality Manufacturers of Commercial Refrigeration Hardware

Grand Rapids Brass Company

Makers of Dependable Restrigerator Hardware for over 40 Years

Grand Rapids 1, Michigan



Just the DUNTER

DESIGN FOR TOMORROW

2. Management Methods

THE policies and plans from this point on deal with the future progress of the business.

When the customer begins to take over, the business executive must carefully appraise the facilities at his disposal which will enable him to go out into a competitive market and get his scare of the business. He must shape his policies and practices to enable him to secure business at fair prices which will in turn provide reasonable and fair gross profits.

Chiseling and price cutting is a blight to sound, successful business. The price cutter not only destroys his own chances of success, but also makes success difficult for others who recognize the necessity of earning a reasonable and fair gross profit to keep the business solvent, progressively healthy, and strong.

Most merchandise carries a published sales price which establishes a fair gross profit return. If a business is to be successfully operated, the

his is the second in a series of three articles aimed at reminding the individual businessman that the return of really tough competition is "just around the corner" and suggesting to him how he can set about to prepare his business or-ganization for this return to normal merchandising conditions.

merchandising conditions.

Part 1 of this series, entitled "Inventories and Credits", was published in last month's issue; Part 3, dealing with "Sales and Advertising", will appear in this column next month.

executive must analyze and appraise his potential market possibilities, set up his sales and advertising activities to enable him to secure a fair share of the potential business, and then organize his business operation and expense to enable him to realize a satisfactory net profit after all the costs of doing business have been taken care

Operating expenses play an important part in the success or failure

of a business, particularly in a period of strong competition. There is always a certain limitation to the total volume of sales within a given market area. Therefore, it is of the utmost importance that good management be constantly appraising the efficiency of the business operation, with the objective of securing maximum efficien-

cv at a minimum cost of operation. During the recent years of abnormal sales, the tendency has been to neglect attention to operating efficiency and high operating costs. This condition was further influenced by the greatly increased amount of office work and paper work resulting from shortages of merchandise, partial

REWA members offer you

- Sound, helpful engineering advice on products.
- 2. Local warehouse facilities with ample stocks to serve the trade.
- 3. Intelligent, competent sales representation, plus economy in handling credits, adjustments, etc.
- 4. Catalogs, advertising, and other promotional activities directed toward keeping the trade informed as to new products, changes in design, prices, etc.
- 5. Progressive, business-like distribution contributing toward the stability of the industry.
- Sound operating policies based upon ethical trade practices.

180 MEMBERS MAINTAINING OVER 300 CONVENIENT **OUTLETS**

H. S. McCloud, Executive Secretary

formed salesmen take care of your needs when you do business with a REW A wholesaler. They make your problems their problems-cooperate to the limit. And if a credit or adjustment is necessary you can be sure it will be handled promptly, courteously and to your entire satisfaction.

Alert, friendly and fully in-

BUY FROM A 920 East McMillan St., Cincinnati 6, Ohio



Ace Refrigeration? I think it's the repair department I want!"

shipments, changing prices, back orders, and many unusual controls requiring the filling out of numerous reports and forms.

Now is a good time to start appraising your office and business organization. Make sure there is no excess or unnecessary help on the payroll. Be sure each employee is efficient, conscientious and doing a good job. Be sure the expense of operating your business is at a minimum consistent with the necessity for maintaining the proper efficiency to keep the business operation in a satisfactory, healthy condition.

Remember, the formula for a satisfactory net profit statement at the end of each year is maximum gross profit minus minimum operating expense.

An efficient operation is a tribute to good management. With the inventory in well balanced liquid condition, the credit situation under satisfactory control, and the business organization efficiently functioning, the management can next devote full attention to sales and advertising.

BUY FROM YOUR REFRIGERATION WHOLESALER

BETZ CORP. APPOINTS NEW FACTORY REPRESENTATIVE

Gullatt Co. of Atlanta, Ga. has been appointed direct factory representative in the southeastern section of the U. S. for Betz Corp., manufacturer of "Filterpure" lowside equipment.

Henry W. Gullatt heads the organization which bears his name. John Blumhardt, a member of the Gullatt executive staff, has been placed in direct charge of Filterpure sales.

Distributor appointments are now being made in the Gullatt territory.

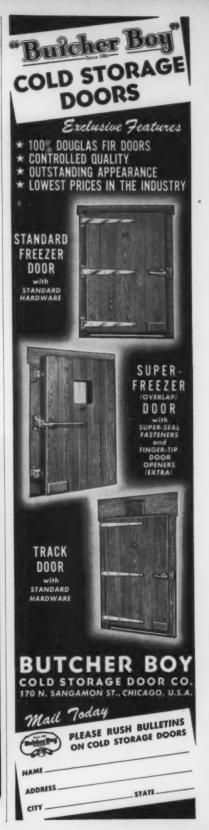
SIMONS OPENS BRANCH IN PORTLAND, ME.

Joseph Simons Co., refrigeration wholesaler with headquarters in Hartford, Conn., has opened a branch store at 198 Grant St., Portland, Me. L. D. (Larry) Clark of Portland is manager.

HARVEY TO MANAGE NELSON TEXAS STORE

A. J. Harvey has been named manager of the N. O. Nelson Co. branch warehouse in Wichita Falls, Tex., replacing George Vogelsong.







say leading makers of refrigerating and air conditioning compressors.

TEXACO Capella Oils are approved by compressor manufacturers because they have "what it takes" to keep compressors running at their best. Texaco Capella Oils are highly stable and free from moisture. They do not react with refrigerants. They have very low pour tests and very high resistance to gumming and sludging.

In addition, Texaco Capella Oils come in a complete viscosity range, and containers are re-sealable to keep unused oil in proper condition. Available in 1-qt., 1-gal., and 5-gal. sizes.

INCREASE YOUR PROFITABLE COMPRES-SOR OIL BUSINESS: Distributors, dealers and service engineers throughout the 48 States are gaining satisfied customers and building profitable new and repeat business with *Texaco Capella Oils*. Join them! The Texas Company, 135 East 42nd Street, New York 17, N. Y.

GET THIS LUBRICATION GUIDE

New edition. Lists make and type of compressor and refrigerants in 64 Electric Refrigerating Units and 39 Air Conditioning Units. Shows recommended grade of Texaco Capella Oil for each. Use guide as wall chart or bind into service manual.



TEXACO Capella Oils

FOR ALL AIR CONDITIONING AND REFRIGERATING EQUIPMENT



Tune in . . . Texaco Star Theatre every Wednesday night featuring Gordon MacRae and Evelyn Knight . . . ABC Network

RIGHT FLUXES REFRIGERATION INDUSTRY

There is absolutely no irritation to the eyes, nose or skin when using Krembs FLUXINE Fluxes. There are positively no injurious fumes. That is only one of the many advantages of Krembs FLUXINE Fluxes. They are highly concentrated . . . contain no waste material . . . just flux. That's why they do more and better brazing, soft soldering, and silver soldering.

There is a FLUXINE Flux for every metal-joining operation. For instance, our FLUXINE Flux No. 43 is ideal for low-meltingpoint silver solders.

There are 89 FLUXINE Fluxes . each for a specific job. Write us your metal-joining problems. We have 70 years of experience.

we have 70 years of experience.

Ask your jobber about
FLUXINE Fluxes. He knows
they produce the best results
with the greatest economy.
Write on your letterhead for chart
which shows the FLUXINE
Fluxes for your metal-joining

KREMBS & COMPANY

Est. 1875 Dept. P. 669 W. Ohio St. CHICAGO 10, ILL.

AMINCO OIL SEPARATORS



Aminco Oil Separators protect compressors by maintaining correct oil level in crankcase and by excluding oil from refrigerant stream they enable coils, condensers, valves and dehydrators to function most efficiently.

These oil separators are made for jobs from ½ H.P. to 120 tons and are used everywhere, ashore or afloat, where efficient refrigeration is desired. Full descriptive bulletins on request.

AMINCO REFRIGERATION PRODUCTS CO.

14544 THIRD AVE. DETROIT 3, MICH. Van D. Clothler, 1015 E. 16th. Lee Angeles George I. Boone, Rm. 739, 1775 Broadway, New York

H. Cody, Santa Fe Bidg., Dallas ort Borg-Warner, 310 So. Mich., Chicago

Refrigeration Engineering

XXIII. **Industrial Cooling of Coolants**

PART I

THE use of refrigeration for the cooling of coolants became widespread during the war.

Controlled coolant temperatures enable machine tools to be operated on three shifts 24 hours a day. Without some type of refrigeration, machine tools must be operated intermittently with frequent cooling off periods to protect machinery and dies from overheating, with resultant warpage and distortion of dies and production failure.

Only through the maintenance of proper temperatures can precision work be turned out in continuous operation with tolerances held to a few thousandths of an inch as is necessary with hundreds of machine operations.

OIL COOLANT USED

Most automatically operated machine tools employ an oil coolant which is constantly circulated over the dies and materials to absorb frictional heat developed in the production opera-

The coolant is stored in a tank or reservoir installed on the machine tool and circulated or pumped over the working parts, returning to the storage tank by gravity.

Some evaporative cooling is accomplished in the circulation of the coolant, but the use of mechanical refrigeration or other cooling methods provides stepped up cooling efficiency which keeps pace with continu-ous operation of the machine tools, holding frictional heat within the necessary limits to

provide satisfactory precision production.

The machine tool manufacturers recognize the advantage of mechanical cooling, and many design their tools for its use.

It must not be assumed however, that all machine tools use mechanical refrigeration for coolant cooling. Many use evaporator types of heat exchangers through which cold water is circulated and used as a cooling medium similar to the action of a water cooled condenser.

In designing mechanical equipment for use in cooling coolants. usually a coil of tubing or an evaporator is installed in the coolant tank, with lines connected to a condensing unit. Frequently one large condensing unit can be used to operate a cooling system, with multiple condensers installed in several coolant tanks in the plant.

SELF-CONTAINED UNITS

A number of self-contained units designed on a principle similar to that of a water cooler also have been brought on the market. With this equipment the heat laden coolant is circulated through the cooler and returned to the machine tool for another cycle of operation.

The smaller individual cooling type equipment has definite cooling capacity ratings and can be selected for an individual job with reasonable assurance that satisfactory results will be obtained once the proper selection of equipment is made. It is, of course, necessary to carefully determine the Btu heat load to make the proper selection.

MARSH LAUNCHES SALES DRIVE ON 2-TEMP UNITS

A complete merchandising and sales promotion campaign has been developed by Jas. P. Marsh Corp. in support of its "Duo-Temp" indooroutdoor thermometer. This program includes full-color counter and window displays, 3-color circulars, and mats for local advertising. The promotional program was prepared on the basis of a complete market survey.

._____

"MAGNILASTIC" PRICES DROPPED BY COOK

The MagniLastic Div. of Cook Electric Co. has announced a price decrease of 15% in its "MagniLastic' packless expansion joints in the 55. 150, and 400 series.

This price adjustment has been made possible by improvements in production methods, tooling, and general shop efficiency, the company reports.

Tests must be conducted by the refrigeration engineer to determine the actual heat load, if these figures have not been compiled and made available by the manufacturer. This job consumes considerable time, during which accurate tests are made, but it is definitely necessary in order to work out an efficient and satisfactory installation.

The coolant temperature usually corresponds to room temperature when the machine tool is started in operation. As the coolant starts circulating over the work, it picks up heat while passing over the dies. This heat, in turn, is somewhat dissipated as the coolant returns to the storage tank and continues its cycle.

ESTIMATING HEAT LOAD

The temperature rise per hour X the pounds of coolant X the "K" factor gives you the hourly heat load.

This heat load and temperature rise should be taken every hour over an entire day's operating period to enable the engineer to secure the maximum load requirements. If the room temperatures vary at different times during the year or during the day, calculations must be made for the maximum period for accurate load figures.

Usually the space in the coolant tank, available for placing an evaporator, is rather limited. Because of this fact, an evaporator using fins provides a greater maximum heat transfer capacity than one without fins.

However, as the coolant tank constantly accumulates sludge and filings from the machine operation, this foreign material in the coolant results in somewhat complicating the situation in cases where an evaporator is installed in the coolant tank, particularly if fins are used on this evaporator.

The sludge will imbed itself between the fins, eventually clogging free circulation of the coolant over the entire evaporator surface. The fins also greatly interfere with the cleaning of the evaporator which is very essential from time to time.

SEPARATE COOLING TANK

The generally accepted ideal method for cooling of coolants is. therefore, through the use of a separate tank containing an evaporator and a coil through which the coolant can be circulated. This tank uses water as a transfer medium. The evaporator cools the water which in turn cools the coolant as it is circulated through the coil in the tank.

The use of a separate cooling tank adds considerable to the overall cost of the system, due both to the need for the tank and also for the installation of a nump to circulate the coolant from the machine tool through the cooling tank. On the other hand, it eliminates much of the problem that develops in keeping an evaporator clean when ininstalled in the coolant tank.

CAPACITY FACTORS

As the size of the evaporator must of necessity be relatively small, the necessary capacity must be provided by operating at relatively low refrigerant temperatures. The evaporator area × the temperature difference × the "K" transfer factor determines the evaporator's heat transfer capacity. This does not mean, however, that refrigerant temperatures should be down in the sub-zero range. The coolant will pass through the system at temperatures ranging from 90 to 100 F, so thus a refrigerant temperature of 30 F. provides a temperature difference from 60 to 70 F.

(To be continued in next issue.)



ROLL-OR-KARI Dual Trucks

are the Ideal Way of Handling Refrigerators. Freezers and Heavy Goods!

Two truck unit. Place one at each end of load. Straps hold securely. Patented foot lever raises for rolling or folding handles swing up for carrying. Capacity 1,000 lbs. Shipping weight 40 lbs. Guaranteed. You, too, will say "how did we ever get along without it?"

Write for Full Details

THE ROLL-OR-KARI CO. Manufacturer

ZUMBROTA . MINNESOTA

SHANK VALVES

Shank COPPER DEHYDRATORS with **Brass Forged Ends**



2" O.D.-Copper Tubing with 34" and 36" Flare Fittings. Ends-Brass Forgings with large hexagon area for Easy Service Mounting. Copper Tube sweat fitted to forging. Brass screens and felt filter.

1" O.D. - Spun End Copper Tube-Brass End Fittings properly proportioned and silver soldered. Brass screens and felt filter.

If Your Jobber Doesn't Stock-Write Us!

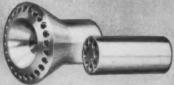
CYRUS SHANK COMPANY

631 W. Jackson Blvd. Chicago 6, III.



Commercial Refrigeration Installations

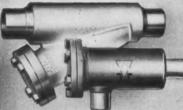
Only SPORLAN Thermostatic Expansion Valves can give you Peak Performance on all installations, because only Sporlan offers you SELECTIVE CHARGES. Each charge is designed to fit a defin-



You'll Get Peak Performance on every installation you make with Sporlan Distributors. The perfectly designed nozzle and conical button assure even distribution regardless of number of outlets.



Solenoid Valves will give you Peak Per-formance on all installations too, because the Sporlan Solenoid Coil is so well insulated ... so moisture proof, that it defies



sportan Strainers are Peak Performers too, because they are designed better... precision built to closer tolerances, and ontain the best materials obtainable.

Place your next order with your Sporlan Wholesaler and get Sporlan throughout.

You'll see why Engineers everywhere recommend PEAK PERFORMANCE SPORLAN PRODUCTS!



Only SPORLAN Catch-Alls can give you Peak Performance on all installations, for only the Catch-All

has a porous molded cylinder. It cannot powder! It cannot pack! It dries the refrigerant to an extremely low end point. A point so low that any remaining moisture is absolutely harmless.

Only SPORLAN offers you the Solenoid Pilot Control,

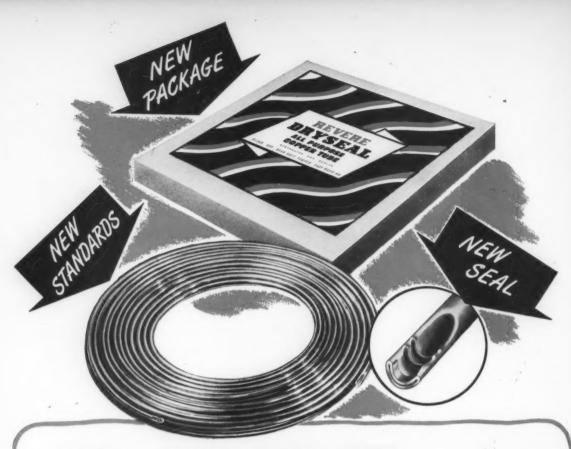
a patented control that gives Peak Per-formance on every installation where large solenoid valves are ordinarily used. Cost less than large solenoid valves to buy... only one size and type to stock . . . cost less than large solenoid valves to install.

electrical failure.



VALVE CO.

LOUIS 17, MISSOURI SUSSEX AVENUE



NOW-MORE THAN EVER

the important thing to know about

refrigeration tube is

175 REVERE

Until now, all Revere Dryseal Copper Refrigeration Tube - regardless of diameter - has been made with an .035" wall. Now Revere is the first to offer you refrigeration tube in new, more economical dimensional standards.

In addition, the new Revere Dryseal Tube has a doublegroove mechanical seal. It is compact enough to pass through any opening large enough for the tube itself. It permanently keeps the interior of the tube clean and bone dry.

Look for the new red and blue Revere Dryseal package. It protects the tube, takes up less storage space and is easier to unpack.

Revere Dryseal Tube comes in sizes from 1/8" to 3/4" O.D. and is packed two 50-foot coils to a package.

Ask your Revere Distributor for all the new facts on the new Dryseal-the easy-to-bend copper refrigeration tube that assures you of fine quality in every length you buy.

BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N.Y.—Sales Offices in Principal Cities.

OPPORTUNITIES

Classified Advertising Section

HELP WANTED

COMMERCIAL REFRIGERATION SALES MANAGERS

Carrier Corporation requires two Commercial Refrigeration Zone Managers for positions with a good future. Applicants must have a proven record in the sale of commercial refrigeration to distributors or national users. Location South and Midwest,

In reply state age, education, experience, preferred location and salary desired. Address Personnel Division, Carrier Corporation, Syracuse I, New York.

COMMERCIAL REFRIGERATION SALES MANAGERS

Distributors and major dealers of Carrier Corporation products need five good Commercial Refrigeration Managers for various locations throughout the country.

Remuneration on the basis of salary plus a percentage of gross margin. Possible earnings of \$8,000 to \$12,000 per year. In reply state age, experience and preferred location.

Address Personnel Division, Carrier Corporation, Syracuse 1, New York.

"Air Conditioning Refrigeration Service installation mechanic. Must have ten years' experience, tools, phone, car, good character, health, personality. Will pay top rate. Steady work, Baltimore area. Include references, pay expected. Your letter kept confidential. Write Box No. 5148.

FOR SALE

For Sale—Steam driven horizontal ammonia compressor excellent condition still in operation but to be replaced by an electric unit. 15½" x 30" Wolfe Linde Compressor with 18" x 42" Vilter Corliss Engine for 125# steam pressure and atmospheric exhaust. Capacity at max. speed 60 RPM and 20# Suct. Press. and 155# Cond. Press. 88 tons refrigeration. \$3,500.00 as is where is. Inquire Atlas Brewing Co. 1503 W. 21st St., Chicago 8, Ill.

AMMONIA COMPRESSORS: New two cylinder vertical single acting, leading brand in sizes 3 x 3 to 9 x 9 available for prompt delivery at realistic prices. Only limited quantity available. Box. 5248.

FOR SALE—Aid-cooled and Water-cooled, remanufactured condensing units, ¾ up to 2 HP. Write for particulars, Edison Cooling Corp., 310 East 149 St., Bronz 51, N. Y.

SEALED CROSLEY TERMINALS. Installed from the outside in a few minutes without opening the compressor or removing unit. No special tools needed. Stops leaky terminals on F-12 units. Part no. 1020 short model—for short Crosley terminals (F-12 compressors with 4 mounting legs). Part no. 1020 long model—for long Crosley terminals (F-12 compressors with 3 mounting legs). \$5.25 set of three. Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

FOR SALE

Stop Terminal Leaks in Crosley Sealed Units by using the Jiffy Terminal. Easy to install, no special tools needed, can be installed in a few minutes without removing unit from cabinet. Set of three terminals \$5.00, or see your jobber. Detroit-Sealed-In Parts Co., 19191 Rogge, Detroit 12, Michigan.

REPAIR SERVICE

Refrigeration Controls and Valves Repaired. Complete service for all makes and types. Also Stoker and Oil-Burner control repaired. All work guaranteed. Write for prices or just mail in controls. Acme Control Service, 5521 Lawrence Avenue, Chicago 30, Ill.

NEW INSULATION OUTLET

Cauhorn Distributing Co. of Detroit has been named exclusive distributor for "Mystik Dri-Pipe" insulation in the eastern Michigan area, according to Mystik Adhesive Products, manufacturer of the self-adhesive insulation for the prevention of condensation on refrigerant lines, cold water pipes, and air ducts.

The Detroit firm plans to sell the product through refrigeration supply wholesalers, contractors, and similar channels. An extensive local advertising program is planned.



Ample frozen food storage space plus a glass meat storage tray of 15 pounds capacity and a "Humidrawer" that holds 3/s of a bushel of vegetables are features of this 9-cu. ft. "American Leader" model in the 1948 Westinghouse household refrigerator line. Door of the freezer compartment stays open so that the user may have free use of both hands if necessary. The normal-temperature storage area is fitted with flexible, chromefinished shelves. Price of this model is \$249.95.

NEW GRAVES BRANCH

Graves Refrigeration, Inc., refrigeration equipment and supplies wholesaler with headquarters in Atlanta, Ga., has opened a new branch in Augusta, Ga., according to R. M. Graves, president. This Augusta branch, managed by G. E. Murphy, is located at 1298 Broad St.



Check with Ranco.

- Specialists In Refrigeration
- Dependability
- Greater Customer
 Satisfaction
- More Ranco Controls In Use
- Less Stock To Carry
- More Profit For You

AND RELY ON

Ranco

Ranco Refrigeration Controls, sold through leading whole-salers everywhere, are products of years of specialized refrigeration engineering experience. You can rely on Ranco to adhere to its established policy of continuous research and development to produce the finest refrigeration controls, always available through your own Ranco wholesaler.





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5,000,000

RANCO CONTROLS
IN USE

Ranco Inc.



World's Largest Manufacturers of REFRIGERATION CONTROLS

THE SERVICE MAN'S DEPARTMENT

Here's how

Edited by Warren W. Farr

Cylinders Are the Key To the Freon Situation

Here is our most recent information on the Freon-12 situation. We'll break it down into bare statistics, so that you can get the picture straightaway. It's not a pretty picture, unless all of us work together—right now—to get more cylinders back into the hands of Kinetic Chemicals. First, some facts and figures:

At this rate, the number of 145-lb. cylinders now unreturned would keep

9 do it this way...

OVER a number of years I have wrestled with the problem of preventing rust on ammonia pipe lines, metal water towers, etc., and find that ordinary roofing tar, dissolved in paint thinner, serves as well as any "coating" I have come across.

The tar is chopped into small pieces, stirred into the thinner until the mixture is the consistency of thin paint. Have the surfaces to be painted as clean and dry as possible, then brush the "tar-paint" on.

When dry, you have a coating that effectively resists the action of weather, water, and the expansion and contraction of the metal.

H. L. Myers, National City, Calif.

the Kinetic plant at work for over three months. That's how it figures out, and that's how serious the cylinder shortage is.

Kinetic has on order cylinders with a shipping capacity of 8,130,000 pounds, but because of the steel shortage deliveries are not expected for several months.

Here's the nub of the situation: shipments of Freon-12 must be regulated by the number of cylinders available. This, in turn, regulates the amount of Freon-12 that can be produced. When production is lost, it is lost forever.

Here's How to Help

Here are some things you can do to help correct this situation:

Return all empty KC INC cylinders now to Kinetic at Carney's Point, N. I.

Transfer Freon-12 now in stock or in storage from cylinders into refrigeration or air conditioning equipment now, and return the empty cylinders to Kinetic for refilling and shipment.

Don't hoard cylinders; keep them in circulation.

Distribute Freon-12 wisely to your customers where the greatest need exists.

In some sections of the country, hot weather is already here. It's a "what helps one helps all" situation; and you've got no right to holler if you're not willing to help.

Selling Hardware Doesn't Require Hard Selling

Have you been passing up a "natural" opportunity to make extra money on your refrigeration service jobs? We're referring to the chance that you have to sell and install replacement hardware on the commercial refrigeration jobs you're doing.

If you'll just look around, on a

good many of these jobs, you'll see plenty of obsolete, loose-fitting, broken-down refrigerator locks and hinges. Equipment of this kind is not only a headache for the owner; it's actually costing him money.

Tell the "Savings" Story

To start with, make a practice of checking for doors that don't fit tight enough. Look for broken handles and bolts, for worn, sagging hinges. Then show your customer how worn-out hardware and gaskets are costing him money in extra refrigeration costs. Show him how a new set of hardware will "dress up" his equipment, besides making it more economical to operate. Tell him how this comparatively small expenditure will pay for itself in savings of time, power, and merchandise.

Try out this idea for a while you'll sell extra hardware and put extra profits in your pocket.

9 do it this way...



HERE'S how I solved the problem of tightening belts on all fractional horsepower units.

By shaping the "eye" on several turnbuckles that I carry in my tool box (like the one shown in the accompanying sketch, it is a simple operation to slip the ends in the motor pulley and flywheel groove, then simply turn until the belt tension is right and tighten motor bolts.

If preferred, the "eye" could be cut off and a piece of metal like a motor shaft key could be shaped like a crescent and brazed onto the turnbuckle.

I. Benedict, New Orleans

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Blocks are equipped with new oil hole screw and locating pin, and complete sets are tested ander actual operation.

WE ALSO HAVE AVAILABLE THE FOLLOWING ITEMS FOR COLDSPOT REFRIGERATORS

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If your wholesaler does not stock any of these items, order direct and send us the name of your regular supplier.

RIXCO DISTRIBUTING CO.

- 7330 Lindell, St. Louis 5, Mo. -

Are You Losing Money On Your Time Records?

Perhaps you haven't stopped to think much about it, but inadequate, inaccurate time-keeping records can become a major "expense" item over a year's time.

Nowadays, accurate records of hours worked are extremely important; wage-hour and social security laws require detailed tabulations of hourly and weekly employment. You are buying time from the persons who work for you, and selling that time (among other things) to customers who buy your service from

Have you ever thought of how much "time leaks" can cost you? Here are some figures that should make you think:

As little as five minutes a day lost from productive work runs into pretty respectable figures over a year's period. For instance, at \$5 a day, your time leaks cost you \$16.25 for one employee, \$162.50 for 10 workers, \$406.25 for 25 employees, \$812.50 for a staff of 50. All of these figures assume a work-day of eight

At \$7 a day, your cost for the lost five minutes a day amounts to \$22.75 for one employee, \$227.50 for 10, \$568.75 for 25, and \$1137.50 for 50 employees.

Ice Cream Business Is Good Business

Some interesting figures on possibilities in the ice cream sales field have come up as a result of a survey of super markets in one trade area recently. It was found that, although ice cream occupied only 0.88% of total display area, it accounted for 2.02% of total volume and-more importantly-4.7% of the stores' total margin.

Most sales are now in pint and quart containers, but it isn't hard to visualize a time when, with increased low temperature storage facilities in the home, the trend will be to halfgallon or even gallon size units. It would be handier for the homemaker; and consumption doubtless would increase with an increase in sale of "bulk" packages.

Check on your local food merchants if they're not selling ice cream now. they're missing some good profits, and you're missing some extra salesand service-business.

WANT TO EARN \$5?

You don't have to be a writer or a literary genius! Just dot down some of the shortcuts you've developed in your maintenance or installation work and send them to HERE'S HOW EDITOR, REFRIG-ERATION INDUSTRY. Your \$5 will be paid promptly when your maintenance tip is published in the magazine. Let's hear from you!

I do it this way...

CARRY in my service kit an unusual-but very handy-item for a man working on refrigeration equipment. It's a medium size steel crochet hook!

This little "tool," I've found, is just the thing to use in reaching into the almost inaccessible zone in a compact cold control switch in order to remove and re-install extension springs.

Because of the small size of the crochet hook's shaft, you can see what you're doing when you're using it. The hook is small enough to catch the loop on the spring, even while the loop is around its anchor, and it won't slip off as the shaft bends upon applying pressure, thereby firmly holding the spring loop in the crochet "hook."

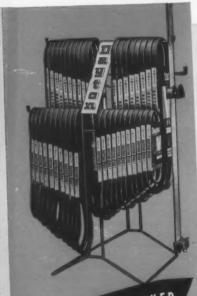
I use it very often on Westinghouse cold controls whenever I have to remove the contact for cleaning or replacement. I find Frigidaire cold controls often with an end loop broken off the switch toggle spring. To install a new spring, using the crochet hook is very easy-without the hook, it's a trying task.

J. W. Gibb, Vancouver, B. C. Editor's Note: Besides the applications mentioned by Mr. Gibb, this is a good device to use for reaching other small parts that are dropped and might otherwise require much time to recover. We can recommend this as a dandy "tool" to add to your kit.

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Dayton V-Belts are used on millions of refrigerators, washing machines, pumps, compressors and all types of fractional horsepower motors.

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Popular Dayton V-Belts are available for all small machinery use. Recog-nized as a quality product the moment they're displayed—they move fast.

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unequaled for speed and simplicity in finding the correct replacement V-Belt.

INSTRUCTION FOLDER with HELPFUL DISPLAY HINTS

How to use the Matchometer how to select the correct replacement V-Belt-how to utilize the merchandising aids, etc.



WALL AND WINDOW STREAMERS

Colorful attention-getting banners, streamers and window posters are packed with each assortment



HANDY FHP CATALOG No. 44

Complete listing of all types of small machinery with the correct V-Belt replacement readily available in a handy pocket-size booklet.



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Belt numbers, size and suggested resale price are included on each card for ready and quick reference.



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Dry Beverage Coolers

Meat Display Cases Cold Storage Doors

Sectional Reach-In Refrigerators
(Hard Rubber Sliding Doors)



See your wholesale jobber in your territory or write direct to the Kansas City Office for complete sales information.

Dry Beverage Cooler Specifications: 6', 8', and 10' size. 3" fibreglas insulation. Wood frame throughout for rugged construction. Stainless steel finger tip control doors, (disappearing type). Choice of blower or gravity coil. Removable top for ease of interchanging coils. Brown enamel finish.

LINGLE REFRIGERATOR COMPANY, INC.

The

95th & Troost, Box 7111 Country Club Station

Kansas City 2, Missouri

The

PREMIER KIT

Flush Valve Ports in MINUTES! SELF ALIGNING VALVE GRINDING

Yes, this amazingly lowpriced kit makes it easy for any experienced refrigeration service man to grind, finish and test recessed or flush valve seats (either piston or flapper jobs). Speeds up work, saves buying new parts. No more tiresome hand-lapping.

A TYPICAL TESTIMONIAL

"I have been using the PREMIER SELF ALIGNING VALVE GRINDING KITS for the past three or four months, and would like to take this opportunity to thank you for coming out with such a tool.

Since using this kit, I do not see how I got along without it all these years. It has saved me money and valuable time in waiting for replacement parts."

APPLIANCE SERVICE COMPANY GREENSBURG, PA.

Paul Brandstetter, Service Manager

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A MUST FOR EVERY FIRST CLASS SHOP



See this time and money saving tool at your Jobbers

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ARTKRAFT CO. APPOINTS MONEY VICE PRESIDENT

R. H. Money is now devoting full time to duties as vice president in charge of engineering for Artkraft Mfg. Co., Lima, Ohio, and its affiliate American Furniture, Inc., Little Rock, Ark., according to Morton L. Clark, Artkraft president. Money has been an officer and director of Artkraft for more than a year. He is no longer doing advisory work for Reynolds Metals Co., with whom he became associated in 1946.

Artkraft is presently producing a coin-operated liquid dispenser, a beverage cooler, a combination beverage and food cooler, a table-top dual temperature freezer and a home freezer,

I MPRESSIVE savings in the operation of air conditioning systems under both winter and summer conditions, plus a new high in odor control, may be realized in hotels through installation of an air recovery device making use of activated carbon. Complete details of the innovation are covered in Research Report \$15\$, published by the American Hotel Association.

Jake Fassett, director of AHA's service department, declares the report should prove highly valuable to hotels having central type systems or unit conditioners or where new installations are under consideration.

According to the report, both the initial and operating costs of any air conditioning installation are directly related to the amount of outdoor air required by the conditioned area for ventilation or dilution of air-borne impurities, but by the new purification method the requirement for outside air is kept to a minimum and costs reduced.

It was pointed out that a conservative estimate of capital and operating expense for conditioning 1000 cubic feet per minute of outdoor or ventilation air is \$234 annually, while under the new method the cost approximates \$41, a net savings of \$193.00 per year.

HOUSTON JOBBER MOVES

D. C. Lingo Co., Houston, Tex. wholesaler of refrigeration equipment, has moved to new and larger quarters at 1109 Chenevert St.

The new Lingo store has 4000 sq. ft. of available floor space and 25 feet of counter. Located out of the congested traffic area, it provides ample space for convenient parking.

Fischer Bros.' "Open House" Pays Off To Tune of \$50,000

Earlier this year J. Geo. Fischer & Sons, Inc., Saginaw, Mich. whole-saler of refrigeration equipment and supplies, household appliances, and electrical equipment, staged a three-day open house which resulted in more than \$50,000 worth of business. Billed as the "1948 Michigan Refrigeration Show", this event featured displays by many of the manufacturers whose lines the Fischer firm handles, and drew a total attendance well in excess of 2000 persons. These pictures show some of the people who were present.



C. E. Whipps of Ranco discusses a control problem with Bill Culver of the Fischer organization, as A. J. Seymore a nd George Holnagel of Baker-Perkins Co., Saginaw, stand by at the right.



Bill Culver's wife admires the advertising display shown her by Floyd Duvall of Ansul Chemical Co.



C. E. Corbin of Viking Refrigerators, Inc., Kansas City, is flanked by two Fischer men. That's E. S. Jones of Fischer's Detroit office on the left, and Bruce Cowan of the Grand Rapids branch on the right.



Photos by Austin Jones, Kerotest Mfg. Co.

Steve Hanna and Bud Haldeman of Brunner Mfg. Co. take a breather in their c o m p a n y 's compressor display.



ATTIC and WINDOW FAN CONTROL

\$11.95 LIST



There's extra profits in selling convenience and comfort! Home owners everywhere are a ready market for Paragon AF Timers for the control of attic and window ventilation fans in their homes. They welcome the extra comfort of cooling fans ... the convenience of having fans controlled automatically.

- ✓ Telechron Motored Self-Starting, Synchronous, Quiet
- ✓ Two Time Ranges: 0 to 10 and 0 to 20 Hours
- ► Capacity ¾HP at 115 V., AC
- Accurate Dependable Easy-To-Install

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This ® Model 205-C

... Has Compactness of a 1-ton Valve yet handles up to 2½ tons Freon!

Use it without adjustment for -40° to usual air conditioning temperatures

You can install the A-P Model 205-C in a surprisingly wide variety of systems, for it handles everything from ½ ton at -40° to 2½ tons Freon at 40° or higher! Because of its cross charged power element, it can be used over this extreme capacity and suction pressure temperature range without adjustment. And regardless of body position or ambient temperature the bulb never loses control. It gains control quickly, and maintains a constant super-

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Because of its wide capacity, versatility, simplicity of installation and time-proven DEPEND-ABILITY in all installations, A-P Model 205-C probably is in more systems than any other similar expansion Valve. Make it your standard. Capacities up to 2½ tons Freon, 4¾ tons Methyl or Sulphur. Three orifice sizes, .062", .110", .162". Stocked and sold by leading whole-salers everywhere. Write for bulletin E-121.

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